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ABSTRACT

The 1988-89 California state budget provided funding to support the development of pilot programs extending high school-community college career articulated programs to the baccalaureate level. By 1990-91, 24 of these "2 + 2 + 2" programs had been funded, including 14 projects in career education, 8 in teacher education, and 2 in home economics. Findings of a third-party evaluation of the projects included the following: (1) the curriculum articulation objectives of the projects were met in most all projects; (2) the three most common methods of curriculum articulation were course-to-course articulation; program articulation; and general education, college preparatory, or basic skills program development; (3) faculty participants indicated that communication among the three educational levels was the most rewarding project outcome; (4) the majority of the projects included coordination with student support services at the community-college level; (5) many programs reported difficulties in tracking students through the 2 + 2 + 2 process because of inconsistent student identification methods; (6) by spring 1991, there were 3,190 student participants statewide; and (7) characteristics of successful projects included an entrepreneurial director, administrative support, and an advisory council of representatives from all educational segments. This two-part evaluation report examines career education and teacher education projects separately. Brief report summaries for each of the projects, a series of recommendations, and student tracking tables are included. (PAA)

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Third Party Evaluation
of
2+2+2
Articulated Career Education Programs

1988 - 1991
Final Report

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EXECUTIVE SUMMARY

Responding to Assembly Bill 3639 (Bradley), 1986, the California Postsecondary Education Commission (CPEC) studied the feasibility of extending high school-community college career articulated programs to the baccalaureate level. As a result of CPEC's study, the 1988-89 State Budget provided funds to support the development of such programs currently referred to as "2+2+2" programs. The California Community Colleges Transfer and Articulation Unit became the administrative agent for this pilot project. Eighteen projects were selected for funding from December 1, 1988 to June 30, 1989.

The 1989-90 State Budget contained second year funding for the existing projects as well as for the development of new projects in home economics/marketing and teacher education with an emphasis on the recruitment of underrepresented students. Through a request for proposal and selection process, two projects were chosen for funding in the home economics/marketing area and eight projects were selected in teacher education.

The 1990-91 State Budget contained funding for one more year for projects to finalize the 2+2+2 model, transition to an institutionalized program, and complete development of materials and resources for dissemination. Twenty-four projects were chosen for continued funding through the RFP process. Of these, fourteen projects were from the original group, eight were teacher education projects and two were home economics projects.

The Rancho Santiago Research Center was engaged to conduct an annual evaluation of the projects, beginning in 1988-89. The evaluation has been guided by the 2+2+2 Project

Intersegmental Advisory Committee and included the following evaluation methods: Site visits were conducted to a sample of the projects each year; end-of-the-year annual reports were submitted to the evaluator each year from the projects; and, three annual "debriefing" meetings for all project directors were held. Additionally, a student participant identification and follow-up model was put into place by each project and was operational in the career education projects by the end of 1989-90 and in the teacher education projects during 1990-91. The first evaluation report focused on the initial operations and implementation of the projects and delineated the extent to which the projects met their proposed objectives. The second year evaluation reported on the progress of the projects in program implementation, the extent to which all projects met their objectives, and identified some of the emerging functional components of a model 2+2+2 project. During the final year the emphasis was on institutionalization and fine tuning of the 2+2+2 and this final report evaluates these efforts and the overall outcomes of the project.

This report is presented in two sections. Section 1 describes and evaluates the progress of the career education projects. Section 2 addresses the teacher education projects. A summary of the contents of the evaluation report follows.

Curriculum Articulation

Curriculum articulation objectives of the projects were met in most all of the projects, and accomplishments were most significant in this area. Three types of curriculum articulation were found to be most common: 1) **course-to-course articulation** whereby program courses in each segment were individually articulated in content and for equivalency and sequencing, 2) **program articulation** which includes the evaluation of a full program at one or more segments

for program sequencing, and 3) **general education, college preparatory, or basic skills program development** to provide students with the preparation needed for program entry at a subsequent segment.

Projects most often continued throughout the duration of funding with the type of articulation initiated in the first year. By the third year, changes which occurred in the curriculum in the high schools initiated sizeable reworking of articulation agreements. These changes sometime led to a switch from course-to-course to program articulation. Also by the last funded year, articulation activities for many projects had expanded to include additional schools as well as the spread of articulation to other departments within each segment. The project personnel found themselves regarded as in-house experts in the development of articulation.

Some positive impacts on curriculum occurred as articulation was further enhanced. Improvement of curriculum was noted throughout all projects. The faculty, particularly at the high school level, felt that the 2+2+2 helped resuscitate their waning enrollments and kept their vocational courses alive. This was most often stated about the technical "shop" and vocational business courses.

Policies regarding the granting of course credit for students as they progress from one segment to another varied considerably among projects and among the segments. Sometimes college credit was awarded after completion of an articulated course at a lower level, and sometimes, at the community college level, competency exams were also required as well as course completion. Some schools did not transfer credit, but course completion at one segment allowed a student advanced placement program status at the next segment.

Several projects, such as those in nursing, the transfer business program and teacher education, have identified the need to attempt to make provisions for 2+2+2 student admittance to impacted programs on the next segmental level. Two of the nursing programs and one teacher education program have made arrangements for a given number of 2+2+2 students to be guaranteed admissions to the impacted programs. This issue has become even more important as the university budget problems begin to limit transfer access.

Basic Skills Issues

There are two groups of students for whom the acquisition of basic skills has become an issue of concern for this project. The first group includes vocational students, and the second, English as a Second Language (ESL) students. Historically, students placed in vocational courses in high school have not performed at the same academic level as those in the college preparatory program. Yet, as 2+2+2 participants the vocational students are suddenly expected to be prepared to do college work. Weak basic skills and the subsequent need for remedial coursework could become an obstacle to successful participation in the 2+2+2 program. It is essential that students come to understand the need for basic skills and be enabled and encouraged to acquire them. Second, while ESL students may be enrolled in vocational or college preparatory programs, they frequently have the same need to bring their basic skills competencies to college level.

Communication and Outreach

The need for maintaining ongoing communications was often reported by project directors as "critical." Many different methods of communication were utilized among articulating schools in each project were utilized. Faculty participants repeatedly expressed that increased communication among the segments was the most rewarding outcome of project participation. This communication resulted in professional renewal for staff and enabled progress in curriculum articulation and improvement.

The community college was usually the hub of the outreach activities. During the first year, outreach activities to attract students were more extensive in projects where their initial stage of articulation development was the most advanced. For the projects in their second year, the focus of activities included extensive student outreach efforts to enroll students in the newly articulated programs. The teacher education projects, as was their charge, emphasized outreach early on to recruit underrepresented students. As the projects moved toward institutionalization in the third year, outreach to students increasingly became integrated with regular institutional outreach activities and programs, such as EOPS, Workability and CALSOAP. Even though that may be more economical, there is a concern that the 2+2+2 could be in danger of losing its identity as a special program.

Student Services Involvement

The majority of the projects included coordination with and involvement of student support services, primarily counseling and matriculation services, at the community college level. Counselors at all segments in most projects attended special workshops and received

written material so that they effectively provided support to the program. Fiscal constraints somewhat inhibited the implementation of project-specific student services.

Frequently, the student support services serving the career articulated program students were those services that were routinely provided or available to all students. For example, more than half of the projects reported relying on the community college matriculation services and transfer centers. Special tutoring programs, special orientation sessions, special clubs and program-specific support groups were the most often mentioned additions to routine services.

It was noted that at the secondary level there was a lack of established student services because of fiscal constraints. Where there were established student support services such as tutoring, the services had frequently been provided by specially funded programs. After the project ends, student support services merit continued attention as an important tool for retaining high school students both in school and in the program and in easing the transition to college.

Student Follow-up

To fully evaluate the 2+2+2 programs, it is necessary to describe the characteristics and monitor the educational progress of students participating in the programs. All projects reported that they created mechanisms by which to identify program participants and were monitoring students' progress. First, the follow-up requirement has been complicated, however, by the following: The process seemed to break down because there was no consistent student identification number in use, i.e., social security number, that could be used to track students as they move through the segments; and second, for large scale, long-term student tracking, a

computer-based process would be both efficient and labor-saving, but for a variety of reasons was not available for use at the project level.

While the projects acknowledged the value of student follow-up, they were also aware of the costliness of the follow-up procedure and the shortfall of funds to monitor students beyond the 2+2+2 project term. For this reason tracking was cited most frequently as the aspect of the project which may not continue after funding ends.

Student Demographics

By spring 1991, the last semester of the project, there were a total of 3,190 student participants statewide. Most of the students were still in high school since there had not been enough elapsed time for much movement between the segments. The teacher education projects were predominantly female (73%), while the career education projects were 56% female. The overall ethnic distribution was 7% Black, 6% Asian, 40% Hispanic and 38% White in the teacher education projects. In the career education projects the ethnic distribution was 5% Black, 8% Asian, 16% Hispanic and 62% White.

Completion of Projects' Objectives

Each year the annual progress report form asked 2+2+2 project directors to list each original objective and to indicate whether those objectives had been completed. A review of those responses reveals that, in general, most objectives were met. Projects reported learning that articulated programs require labor-intensive, complex, and time-consuming efforts, but the rewards, particularly in the areas of increased interactions, understanding, and agreements

among segments, were great. These benefits will continue to accrue to the students as they transit from one segment to another.

Conclusions

Three years ago, the notion was to fund, develop, and implement 2+2+2 programs on a pilot basis. This pilot project found that charge to be extremely complex to carry out, but the benefits and successes to the participating segments and students are of great value. The value of the program will persist as a result of the efforts of the last three years. The 2+2+2 attempted to cover new ground, linking career education at the secondary level, through technical and liberal arts coursework at the community college, to the university, on a scale that had not been previously attempted. The projects encountered more difficulties than foreseen, and technical support for their effort, as was soon evident, required an extraordinary commitment of time by the community college program monitors, who were instrumental in the achievements of this project.

The addition of the university segment to existing 2+2 career education programs was more troublesome than anticipated. It was expected that the projects would develop a seamless transition from one segment to the next which would consist of clearly defined pathways characterized by articulated curriculum, outreach, and student services. The ideal was that the first year would be for planning, the second for implementation, and the last year would be concerned with finalizing the 2+2+2 model, including completing the development of documentation materials and resources for dissemination and institutionalization. The projects

for the most part achieved these objectives, but they did so in their own time, to varying degrees and in disparate ways.

From the beginning of the program there was an assumption that the existing 2+2's were complete and in place and would require minimal attention for maintenance purposes while serving as the basis for adding the other "2". What was found instead was that the initial 2+2's required time-consuming additional work, nurturing and review. So that while new linkages were being explored and established, the older ones had to be carefully maintained. This was especially characteristic of the high school-community college connection. In fact, the maintenance and strengthening of the initial 2+2 as the basis for the third "2" was an important outcome, or achievement, of the project.

It is important to note that a major contribution of these efforts was the enhancement of articulation practices and experiences in general across the segments. While 2+2+2 is a specialized form of an articulated program, articulation activities are ingredients of much-needed educational reform and cannot receive enough attention. This program advanced the sophistication and status of articulation.

Characteristics of Successful Projects

An important outcome of the project was an enhanced body of knowledge and experience about articulation. Certain predictive prerequisite qualities of the successful project were identified as the 2+2+2 project progressed.

- **An entrepreneurial director**. Since many of the projects were breaking new ground and encountered a variety of obstacles, the directors who were innovative

in their approach could forestall or circumvent problems and were more successful in completing objectives in a timely manner.

- **Administrative support within each segment**. The effective administrator acted as consultant and enabler and was an active part of an intersegmental administrative team that went beyond token program support to provide top level leadership and ensure the quality of the project.
- **A participatory advisory committee consisting of representatives of all segments**. The complete committee included employers, parents and students as well as educators.
- **An articulation council** or some other framework which defined institutional articulation policies and procedures. Some councils provided a facilitator to assist in accomplishing articulation. The more effective councils included all three segments actively taking part, and were not limited to just the subject area of the project.
- **Faculty who acknowledge the need for articulation**, were not "territorial," that is, did not insist that only their segment could teach a certain skill, and were willing to spend the time and energy to work out agreements.
- **Student services programs** at the community college which provided the counselor-to-counselor linkage with the high school, and coordinated and integrated services such as assessment, EOPS and financial aid, with the 2+2+2.

- **An institutional commitment** on the part of the participating segments to the value of the project so that top and mid-level administrative and financial support will continue after funding has ended.

Additionally, it was found to be important, before attempting to establish intersegmental linkages, to prepare for articulation by examining and evaluating existing curriculum at each level and defining skill levels so that courses were ready to be articulated.

The presence of some structure or existing articulation history, procedures, and policies to deal with articulation within each institution is advantageous. The universities had established networks with the community colleges because of their experience with general education certification and the transfer of credit, but it could not be assumed that there were existing procedures and processes in place for developing articulation of courses and programs.

The community college participants initially displayed the full range of structures for curriculum articulation, from those which had established documented policies and procedures, assigned articulation coordinators and functioning transfer centers, to those which had not yet developed a policy for articulation. The less structure that was present, the more difficult it was to complete lasting articulation agreements. As the 2+2+2 program progressed it became obvious that the community college was in the best position to broker the link with the other segments, as both the secondary- and university-funded projects found it difficult to work through the intervening bureaucratic layers to reach their twice-removed partners.

Career Education Project Outcomes

The project demonstrated that it was possible to accomplish the objectives of 2+2+2 under a variety of circumstances and in a multiplicity of ways. 2+2+2 became a functioning reality. As a result of the funding for this project, along with improved communications and understanding, it was clear that mutual professional respect and cooperation have grown apace between all levels. The overall result is an enhanced articulation program among all segments. Curriculum has been revised, reformed, and improved. Instruction has been energized. As a result, a cadre of experts in both the mechanics and politics of 2+2+2 articulation has been established which can provide assistance in the development of other 2+2+2 programs. This group of high quality 2+2+2 projects is so diverse that they can serve as models for schools interested in extending, improving or initiating nearly any phase of a 2+2+2 program. Furthermore, sets of materials for promoting 2+2+2 have been developed which can be adapted for use by interested institutions.

Student success was another positive outcome of the project. Participating students have become aware of career options and pathways, and education is coming to be viewed as goal-related and meaningful. It was repeatedly reported that students who would not otherwise have gone to college have been "turned around," and that underrepresented populations were seeing new opportunities and experiencing success.

Teacher Education Project Outcomes

The teacher education 2+2+2 projects were funded in response to the demonstrated need for an enlarged supply of bilingual bicultural teachers. The nine funded projects began at

different levels of program and articulation experience but succeeded well in achieving their objectives. Considering the timelines for these projects, they made remarkable progress, in part because of pre-existing communications networks, in part because they were able to benefit from the earlier projects' experience, and also because of their own enthusiastic efforts and hard work. The teacher education programs concentrated on outreach; therefore, outreach activities began simultaneously with program planning. Cooperation with existing programs for underrepresented students was an important outcome because it was instrumental in enabling the projects to accomplish many of their outreach and student services objectives and ensured the continuance of these service after the 2+2+2 funding is over.

Because the primary focus of the teacher education projects was on enrolling members of underrepresented groups in the program, articulation of the curriculum did not proceed apace. One of the reasons for this was the scope of the curriculum to be articulated. The majority of teacher career pathways are based on college preparatory programs in the high school and liberal arts programs in the community college. The potential volume of curriculum articulation is greater than an education or child/human development department can practically provide. Such extensive articulation could probably be more efficiently and effectively handled by the subject areas under the aegis of an institutional commitment to articulation. The connection of the 2+2 to the university level might most efficiently be handled by transfer agreements rather than through the program or curriculum articulation process because of the volume of programs and the need for constant review.

It has been demonstrated that the teacher education 2+2+2 usually requires an **additional** year of college for most teaching careers. Long-term student support services will

be essential if those aspiring to be teachers are to complete a lengthy and demanding educational pathway.

Recommendations

Career Education Projects

1) This project has demonstrated the effectiveness and value of articulating both vocational and academic **courses,** and vocational and academic **programs**, among the three segments. However, these efforts require resources. It is recommended that such efforts be expanded and continue to be funded by the California Community College Chancellor's Office.

2) Because of the prohibition of using federal funding to make the linkage with the baccalaureate-granting university, it is recommended that State resources be made available to the community colleges for continued development of the connection of the 2+2 with the third 2 (university level) since it is at the community college that the alignment is most critical.

3) It is recommended that the work of the 2+2+2 dissemination project be extended, perhaps in conjunction with the Tech-Prep Resource Centers (See Appendix C), to provide expertise in, and encouragement for, making the linkage to the baccalaureate degree.

   measure the long term impact of the pilot 2+2+2 projects, tracking of student participants needs to be continued to fully determine the impact of the program on participating schools and students. It is recommended that the California

Community College Chancellor's Office fund those projects with comprehensive, well-functioning student follow-up programs and evaluate the long-term impacts on students. Further, it is recommended that the project participants be surveyed annually to identify and evaluate the later effects and implementation status of the 2+2+2 program.

5) To facilitate intersegmental follow-up, it is recommended that the State administrative offices of all three segments support the notion that social security numbers be phased in as universal student identifiers for all segments.

6) It has been found that the university systems are deliberate in making changes to curriculum. It is recommended that the Chancellor's Offices of the State University and University of California systems review the procedures for articulation and consider the possibilities for streamlining the process.

Teacher Education Projects

1) It is recommended that the State of California authorize funding for a longitudinal study to evaluate the effectiveness the 2+2+2 teacher education project in increasing the supply of underrepresented teachers.

2) It is recommended that funding be provided by the State to the community colleges to coordinate all programs addressing recruitment/outreach to the underrepresented for enrollment in teaching programs and that the 2+2+2 be integrated with them.

3) The universities should be encouraged to develop policies about how to handle 2+2+2 students applying for impacted programs. Issues such as filled classes and programs and preferential admittance require attention so that students can be informed of policies and procedures in a timely manner.

4) It is recommended that the courses which can be substituted for taking parts of the National Teacher Exam be standardized statewide since this list varies from school to school and a student who changes schools may find that a course they thought would be accepted is not.

INTRODUCTION AND BACKGROUND

In its 1986 session, the Legislature enacted Assembly Bill 3639 (Bradley), which directed the California Postsecondary Education Commission to study the feasibility of articulating high school-community college career educational programs and extending such programs to the baccalaureate degree level, and to make recommendations about State funding for pilot articulated career education programs by January 1, 1988.

The Commission concluded that many community colleges were involved in career education articulation programs with high schools (2+2) and many were engaged in general education articulation with the universities, but there was a need to promote continuity of programs in both directions across all three educational segments (2+2+2). Therefore, the Commission recommended that the Governor and the Legislature provide funds in the 1988-89 State Budget to support the development of pilot articulated career education projects (2+2+2). In response to that recommendation, the 1988-89 State Budget for the California Community Colleges contained funding for the establishment of 2+2+2 projects. Further funds were provided for a second year of development of selected programs in 1989-90, and additional monies were allocated to fund new 2+2+2 projects in two subject matter areas, Home Economics/Marketing and Teacher Education. An additional year of funding was again provided in 1990-91 for selected continuing projects to refine, implement and institutionalize their programs.

For the purposes of this study, the definition of articulation has been adopted from **Building the Bridge for Better Education** (Chancellor's Office, California Community Colleges, 1987) as:

> a planned process linking two or more educational systems together to help students make a smooth transition and be academically prepared to move from one level to another. In an instructional context, articulation is a systematic process which permits students to move from one course or program level to another without experiencing a delay or duplication learning. In an administrative and student services context, articulation is a program of activities which help students successfully make the transition into the college environment.

Articulated career education programs offer a series of learning experiences that are organized so as to ensure that students pursuing formal education for a particular career field are able to move from one level of education and employment to the next higher level of the career or educational ladder with a minimum amount of duplication or overlap in learning, loss of time in school, and disruption in employment. In this project three educational levels are included: the high school and ROP or adult school; community college; and four-year college or university. These programs provide consistent curriculum and career pathways through which students may proceed. Students may enter, exit, and/or "stop-out" throughout the combined supposed six years of the 2+2+2 educational programs.

During the first year, 1988-89, eighteen projects were funded through the Transfer and Articulation Unit of the California Community Colleges Chancellor's Office, which directed the projects and contracted with the Rancho Santiago Research Center to conduct an annual evaluation of the planning and implementation of the piloting activities, as well as the impact of the program in achieving its specific objectives. An Intersegmental Advisory Committee guided

the development of the research design and reviewed this final report and other reports prior to publication.

In September 1989, two additional Requests for Proposals (RFP's) were issued for 1980-90. The first was for 2+2+2 articulated career education projects in the area of Home Economics/Marketing, and two projects were selected for funding for 1989-90. The second RFP was for articulated 2+2+2 programs in Teacher Education with the emphasis on underrepresented student participants. Eight of these projects were selected for funding. These 10 projects were added to the evaluation of the 17 continuing projects.

In 1990-91, funds were provided for a third and final year of program development, and 24 of the continuing projects were selected for funding.

This final report is presented in two sections. The first examines the collective progress of the original projects and the projects in Home Economics/Marketing - the career education projects - and includes the findings and recommendations of the evaluator. The second section addresses the Teacher Education projects in the same way.

The information for this report was collected by the statewide evaluator from site visits throughout the three-year period to a sample of 28 projects, including interviews with student participants as well as project staff; progress reports submitted annually by each project; the biannual "debriefing" meetings of all Project Directors; student demographic and progress information (tracking) submitted by the projects; and telephone conversations with Project Directors.

It should be noted that most of the information in this report was compiled from "open-ended" responses to on-site interviews and the annual progress reports, thus necessitating

interpretation of responses by the evaluator. Some responses were more complete and detailed than others, and some responses were not easily categorized. This report represents the evaluators' best efforts of interpretation and analysis. The opinions expressed herein are those of the evaluator and do not necessarily reflect the position or policy of the California Community Colleges Chancellor's Office.

Section 1

CAREER EDUCATION PROJECTS

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CAREER EDUCATION PROJECTS

This section describes the progress of the initial group of career education projects and includes the Home Economics/Marketing projects added in 1989.

Description of Projects

1988-89

In November 1988, 18 projects were selected through an RFP (Request for Proposal) process to be funded for the initial 1988-89 portion of the 2+2+2 program. The projects were funded for a total of $410,000*, and individual grants for projects ranged from $15,000 to $34,000. Display 1 shows the projects selected by the Intersegmental Advisory Committee and their grant amounts. The funded projects had the following characteristics:

- Ten projects reported having existing 2+2 programs in place between a high school and/or ROP and a community college, and were extending articulation of those to a four-year college or university.
- Seven projects reported having existing 2+2 programs in place between a community college and a four-year college or university, and were extending articulation of those programs to the high school and/or ROP level.

* An additional $35,000 was provided by the CCC Chancellor's Office for the project.

Display 1

2+2+2 Funded Amounts

GRANT RECIPIENT	1988-89 GRANT AMT.	1989-90 GRANT AMT.	1990-91 GRANT AMT.	TOTAL AMT.
Butte CCD	$21,488	$47,382	$29,940	$98,810
Cerritos CCD	30,000	50,000	30,000	110,000
CSU, Chico (NEHEC)	26,000	48,000	30,000	104,000
CSU, Los Angeles	N/A	30,000	50,000	80,000
CSU, Long Beach	N/A	27,654	49,804	77,458
CSU, San Bernardino	N/A	30,000	50,038	80,038
Coachella CCD (College of the Desert)	28,475	49,611	29,870	107,956
Coast CCD (Golden West College)	26,295	49,538	29,562	101,395
Compton College	25,860	49,667	0	75,527
East San Gabriel ROP	N/A	35,000	50,000	85,000
Foothill/DeAnza CCD	N/A	29,960	48,735	78,695
Imperial CCD	23,721	49,403	29,916	103,040
Kern CCD (Bakersfield College)	16,298	49,901	0	66,199
Long Beach CCD	30,951	47,173	30,000	108,124
Los Rios CCD (American River College)	17,983	50,000	30,000	97,983
Los Rios CCD (Teacher Ed.)	N/A	29,700	49,410	79,110
North Orange CCD (Fullerton College)	30,986	44,977	29,092	105,055
Plumas County Schools	15,350	0	0	15,350
Rancho Santiago CCD	N/A	26,712	48,000	74,712
Saddleback CCD	17,100	28,400	0	45,500
San Bernardino CCD	21,153	41,225	30,000	92,378
San Diego CCD	N/A	27,861	50,000	77,861
San Mateo CCD	33,518	47,730	25,814	107,062
Santa Barbara CCD	31,256	51,714	30,400	113,370
Santa Barbara CCD (Teacher Ed.)	N/A	36,657	50,000	86,657
Southwestern CCD	23,000	49,988	30,000	102,988
State Center CCD	N/A	30,000	50,000	80,000
Stockton Unified District	26,359	50,000	30,000	106,359
Total	$445,793	$1,104,253	$910,581	$2,460,627

- One project proposed an "upside-down curriculum" whereby students who had already completed vocational education programs returned to a community college for general education prior to transferring to a four-year college or university.
- Fifteen of the 18 funded projects were community college districts; one, a State University Foundation; and two, secondary school districts.
- Program areas included (several projects addressed more than one program):

  Nursing - 4
  Business/Accounting/Computer Science - 4
  Engineering/Drafting - 4
  Automotive Technology - 3
  Management of Manufacturing - 2
  Early Childhood Education - 2
  Electronics Technology - 2
  Agriculture - 1
  Administration of Justice - 1

- The projects began at different stages of planning and implementation. Three projects focused on establishing the preliminary groundwork for their 2+2+2 programs. Nine had some existing articulation mechanisms in place, allowing for full implementation including student participation in Fall 1989. And, six projects already had students enrolled in at least one segment of the program and were refining or expanding their 2+2+2 program(s).

Career opportunities for program participants demonstrate the range of vocational career paths developed and addressed by these programs. These career paths, such as from Auto Mechanic to Shop Foreman to Service Manager to Transportation Specialist, represent innovative career path planning which is necessary in a 2+2+2 program. Students are able to enter, exit,

and stop-out to and from the programs, to and from careers, at any point in the sequence. This is one of the advantages of a 2+2+2 program to the student (Display 2, page 9).

Display 2
Articulated Career Education Project Career Options

Funded Agency	Program Area
American River College	Business, Computer Science
CAREERS: bookkeeping, word processing, computer programming careers, accounting, office administration, microcomputer applications, management, marketing, real estate, small business operations, finance, human resources management, insurance, international business, management information systems, production operations, strategic management and land use affairs.	
Bakersfield College	Accounting
CAREERS: accountant, CPA, CMA, bookkeeper, payroll clerk, income tax preparer.	
Butte College	Automotive Technology
CAREERS: service station attendant, automotive technician, tune-up specialist, shop foreman, service manager, manufacturing representative, sales/service, fleet management, training management, manufacturing management.	
Cerritos College	Automotive Mechanical Repair Technology, Drafting and Design
CAREERS: Automotive Technology: auto mechanic, auto technician, area/zone manager, service manager, technical training supervisor. Drafting and Design: mechanical drafter, tool designer, CAD drafter, architectural drafter, design supervisor, project manager, CAD operator.	
Compton College	Automotive Technology
CAREERS: High School: general shop helper, tire mounter, service technician, entry level tune-up technician. Community College: auto parts clerk, service advisor, tune-up technician, general mechanic, technical specialist. CSU: management trainee, technician trainee, parts distributor, credit manager, service manager.	

Funded Agency	Program Area
CSU Chico Foundation	Agriculture
CAREERS: agribusiness management, appraisers, restaurant manager, dietetic technician, recreation worker, natural resource scientist, engineering manager, marketing, sales representative, social service worker, agricultural production specialist.	
CSU Long Beach	Home Economics
CAREERS: Child Development: child care aide, preschool director, recreation leader, child welfare research technician, elementary teacher, group home director. Interior Design: decorator assistant, store manager, furniture/scenery/display designer, buyer, textile researcher.	
East San Gabriel Valley	Fashion Merchandising, Marketing, Home Economics
CAREERS: sales assistance, trimmer, special events producer, store manager/sales, visual merchandising manager, fashion writer, personnel manager, marketing director, display director, textile buyer.	
Fullerton College	Management of Manufacturing, *Printing, Electronics, Machine Technology, Automotive*
CAREERS: production manager, inventory control engineer, junior drafter, certified welder, quality control engineer, machine operator, junior CAD drafter, engineering assistant, CNC machinist, mechanical drafter, CAD drafter, drafting supervisor.	
Golden West College	Nursing
CAREERS: nurse's assistant (ROP), RN (with AS/BSN).	
Imperial Valley College	Administration of Justice, Business
CAREERS: Administration of Justice: policeman, CHP, DEA, FBI, INS, corrections officer, parole officer, probation officer, legal assistant, city police officer, state parks police officer, attorney, judge. Business: accounting, banking and finance, marketing director, business administration, administrative secretary, manager, bookkeeper, data processor, sales clerk, clerical assistant, real estate.	

Funded Agency	Program Area
Long Beach City College	Manufacturing Technology
CAREERS: assembly/aerospace manufacturing supervisor/management, manufacturing technician, tool designer, machine operator, NCO technician, programmer.	
Plumas and Sierra ROP	Nursing
CAREERS: nurse's assistant, LVN, RN (with AS/BSN).	
Saddleback College	Early Childhood Education
CAREERS: early childhood specialist, early childhood teacher, child development specialist, child development mentor, pre-school teacher, pre-school director, kindergarten teacher, early primary teacher, infant care-giver.	
San Bernardino Valley College	Electronics Technology, Computer Assisted Drafting, Machine Trades, *Aeronautics, Auto Body Repair, Refinishing*
CAREERS: electronic assembly, associate engineer, auto repair helper, painting technician, repair technician, printing supervisor, production supervisor, production planner, aircraft general helper, airframe technician, power plant technician, flight operations technician, telecommunications technician, equipment repair, electronics technician, computer maintenance technician, production manager, industrial manager, machine operator, assistant engineer machinist, engineering, production planner, supervisor, teacher.	
San Mateo, College of	Drafting, Electronics Technology
CAREERS: Drafting: documentation control clerk/supervisor, drafter, computer assisted drafter, designer, print machine operator, drafter in training, associate engineer, facilities engineer, planner, production coordinator. Electronic Technology: electronic retail sales, electronic equipment assembly, electronic technician, electronic test engineer, computer technician, medical technician, avionics technician, test engineer, senior electronics technician, associate engineer, programmer, component engineer.	
Santa Barbara City College	Nursing
CAREERS: certified nursing assistant, vocational nurse, associate degree nurse, bachelor of science, nursing	

Funded Agency	Program Area
Southwestern College	Engineering, Engineering Technology
CAREERS: general engineering manufacturing engineer/technician, industrial engineering design and drafting, transfer engineering, BS level engineering, engineering technology, bachelor of vocational education.	
Stagg High School	Nursing
CAREERS: certified nursing assistant, medical office assistant, registered nurse.	

Note: Program areas added after the initial year of funding are indicated in italics.

1989-90

In July 1989, 17 of the original projects were selected through the RFP process for continued funding for a second year of the 2+2+2 program. They were funded for a total of $800,709 and individual grants ranged from $28,4000 to $51,714 (Display 1). The projects reported the following progress:

- All seventeen projects strengthened and expanded their 2+2+2 linkages.
- Six projects reported completing additional articulation agreements with high schools and ROP's.
- Four projects reported completing additional articulation agreements with the four-year segment.
- All projects had program participants enrolled, primarily in the secondary or community college segments.

1990-91

Fourteen continuing projects were selected through the RFP process for funding for a third year. They were funded for a total of $880,581. Individual grants ranged from $29,092 to $50,038 (Display 1).

- Projects reported that continuing attention was required to maintain the currency of existing articulation. Curriculum changes at one segment sometimes required considerable re-working of the initial agreements.
- Four projects reported expanding to include additional schools and completing articulation agreements with them as part of their 2+2+2 project.
- The projects reported both increased new articulation and refinements of the existing link to the university. One project expanded to include additional universities.
- Program participants continued to be largely enrolled in the high school/ROP or community college segments.

Home Economics/Marketing:

A Request for Proposals (RFP) was published in September, 1989 for 2+2+2 pilot career education projects in Home Economics and Marketing. One project was selected and funded for $27,654 and two other applicants were combined into one project and funded for $35,000 for a total of $62,654 (Display 1).

1989-90

- One project had existing 2+2 agreements between the community college and the university and was extending articulation of those to a high school and ROP. This funded agency was a state university and encompassed the full Home Economics subject area.
- One project had established course-to-course articulation between the ROP and community college and was extending articulation to the university and the high school. This funded agency was an ROP and focused on Fashion Merchandizing/ Marketing/Home Economics.

The career opportunities addressed by Home Economics offer a range of options in several fields of employment. The first project is concerned with the full Home Economics array of career paths; the second project, bolstered by its proximity to the Los Angeles garment district, concentrated specifically on Fashion Merchandising and Marketing (Display 2).

1990-91

In 1990, the continuing projects could apply for a second year of funding to complete program implementation and institutionalization. Both projects were selected through the RFP process for funding (Display 1). During this year:

- Existing articulation with the high schools was expanded and revised. New articulation agreements were developed, and the participating CSU campus reviewed and modified its courses.

- The ROP added an additional unit to a course to accommodate entry to the community college system and a better alignment of the program and the community college adopted a core of courses which facilitated transfer of one year of credit from other community colleges into their specialized major.

Extent and Nature of Articulation

All of the projects reported continuing progress each year in developing articulation agreements, but they chose a variety of methods to achieve their objectives.

During the first year, the 18 original projects used different approaches to program implementation based on their resources and prior experience with articulation programs. Two of the projects began with a student survey or needs assessment since they were creating brand new programs. Three projects stated that they had already, or that they newly, established project-specific Advisory Committees, and two reported that they utilized existing broad-based Articulation Councils to assist in developing their projects. Meetings were held with instructional staff, with counselors and, occasionally, with industry representatives or practitioners in the career area. Written agreements were signed indicating administrative support for implementation of the articulation projects. Establishing or building upon existing intersegmental lines of communication was reported by all projects.

During the second year, the projects made marked progress in further developing articulation processes. All projects reported Advisory Committees in place, with business and industry playing an active role on nine of the committees. Certification of general education requirements was also added to one articulation program. The community college courses of

one project will be added to the California Articulation Numbering (CAN) System grid to further enhance articulation. Most projects continued to build upon existing networks and increased the number of articulation agreements. As the projects became more familiar with the mechanics of articulating, it became evident that articulation progress is governed by what is institutionally feasible for each project.

It was **during the third year** that curriculum changes in the high schools initiated sizeable reworking of articulation agreements. In one instance these changes led to a switch from course-to-course to full program articulation (see next section). On the whole, the third year of the project saw the expansion of articulation activities to include additional schools as well as the spread of articulation to other departments within each segment. The project personnel found themselves regarded as in-house experts in the development of articulation.

Curriculum Articulation

The types of articulation reported by the projects at the end of this first year fell into three categories. **Course-to-course articulation** which is course-specific and based upon the examination of course equivalencies, both in scope and content, in order to achieve an alignment of the curriculum. It generally includes the identification of a curriculum ladder, or sequence, and when applicable, agreement upon competencies appropriate to each course level. Twelve community colleges developed course-to-course agreements with project high schools, ROP's, and adult schools.

The second type of articulation, **program articulation**, is defined as the articulation of a full curriculum sequence. Program articulation may include both required general education

coursework and vocational classes. Five projects fell into this category. Two of the nursing programs give credit for clinical experience gained in ROP classes, but require and articulate with the regular college preparatory program as well. Three projects have indicated program articulation specifically between the community college and the university. The advantage of program articulation is that the student knows from the beginning of the program precisely which courses are needed to gain entry into the program at the next segment.

The third type of articulation addresses the traditional **college preparatory program** and provides all of the basic skills and general education needed for college. Two projects have developed this type of program between the high school and community college; a university has articulated a department-specific college core preparatory program with several community colleges.

Another typology of articulation includes "vertical articulation" when courses are aligned sequentially between segments and the more frequently found "horizontal articulation" referring to the alignment of lower division courses and requirements (Knoell, AACJC Journal, Oct/Nov 1990).

Projects most often continued with the type of articulation initiated in the first year, with the exceptions noted. Within the course-to-course and program articulation categories at the high school/community college 2+2 level, these programs provide to the high school student 1) community college credit for community college level courses taken in high school, 2) advanced placement in community college courses for high school graduates who have mastered skills in high school courses, or 3) a properly sequenced and aligned curriculum wherein redundancy and gaps in curriculum for the two segments are avoided.

Some positive changes in curriculum occurred as articulation was implemented. The improvement of curriculum was noted throughout all projects. High school teachers reordered and changed the emphasis of subject matter to better prepare students for the credit by exam given as the course final. There was the opportunity to examine and compare texts. Obsolete subject matter was updated or discarded by faculty in several projects. The faculty, particularly at the high school level, felt that the 2+2+2 helped resuscitate their waning enrollments and kept their vocational courses alive. This was most often stated about the shop and vocational business courses.

The number of course selections offered for each course and the size of enrollments varied very slightly throughout the three years, probably because not enough time has elapsed since the establishment of the 2+2+2 for it to demonstrate a discernible impact on enrollment in the articulated courses.

Those projects which focused on articulation of vocational courses found that program and course tasks and competency levels could be defined and were measurable, although at times when there was an overlap in curriculum territorial issues arose as to which segment should appropriately teach a specific level of skills. Unresolvable difficulties occurred, however, when equipment at the high school was not advanced enough to support the required competencies and agreements could not be completed; or when shrinking secondary school budgets did not allow for maintaining the currency of equipment and articulation agreements therefore fell out.

In some disciplines such as Administration of Justice and Engineering, there were few clear connecting vocational linkages, and articulation of the 2+2 link was with the high school college preparatory program. But not all programs lend themselves to development of the third

"2." Business projects have both a vocational and a general education transfer track. The vocational track in the high school articulates only with the associate degree and is, for the most part, not transferrable, while the high school student with aspirations for a bachelor's in Business is primarily in the college preparatory program in high school and the transfer program in the community college. This career pathway does lend itself to the 2+2+2. To further complicate the situation, the Business classes offered in the high school sometimes articulate with similarly named courses at the community college, for example, word processing, but sometimes do not. For example, Business Law, a transfer level course at the community college, has significantly different course content than the high school class, and there is no basis for articulation. Additionally, the two pathways are so exclusive that, if a vocational Business student changes educational goals, a larger number of units are required to complete the community college transfer requirements beyond the expected 2+2+2 sequence.

Granting of Course Credit

Procedures for awarding and granting credit have been identified by all participating schools and vary considerably among the projects. Examples of some methods and procedures developed by the projects are:

1) After completing a course, high school students must take and pass an Advanced Placement examination with a score of at least three out of a possible maximum of five in order to earn credit at a community college or university.

2) A student who receives a grade of A or B in the articulated high school class, can be recommended by the teacher as eligible for a challenge exam. If the student

earns a score of 70 percent on the challenge exam he/she qualifies for advanced placement and/or course credit in the community college.

3) A student must present a portfolio for evaluation by the university before being granted advanced standing in a lab course.

4) The university will accept the certification of the community college for those classes for which articulation agreements have been signed. Universities are also accepting the high school coursework of a 2+2+2 program as college credit coursework where such agreements have been completed between the community college and high school.

For some high school students, those articulated classes which have been successfully completed are recorded in the student's high school cumulative file. The student then becomes responsible for applying for either advanced placement or credit at the community college, according to the stipulations of the articulation agreement. Seven of the community colleges award credit by exam. They have offered exams both at high school sites, and on the community college campus. One college does not acknowledge transferred credit but states that the standardized course content promotes a smooth transition.

Projects often reported both recency of credit completion and residency requirements as requisites for the granting of credit. "Recency," for about half of these projects, referred to a time limit of two or three years for the secondary graduate to enroll and apply for credit from the community college. As far as residency is concerned, some colleges allow the student who wishes to apply for credit by exam for the high school class to be given credit only after completing 12 units at the community college. In addition, in these cases, the student must be

nrolled in this community college and in good standing. Not all of the projects had such requirements; one reported that they did not have a residency requirement, one stated it was waived, two gave credit during the semester of enrollment/attendance, and one gave credit upon enrollment. Two community colleges award credit upon completion of the next higher course, and one college waives a course prerequisite.

There are also a variety of ways that the projects record the credit earned. Three projects reported that they gave a letter grade, six graded credit/no credit, one gave the same grade as the student earned on the high school final which served as the credit by exam test. Six of the projects show "credit by exam" on the transcript, two display the grade earned with the units completed and no additional comment, and two show the articulated course credited as a graduation requirement completed.

Projects that gave challenge exams were asked who was responsible for giving them and in five instances it was the community college academic department. Two projects indicated they use the same exam for high school testing purposes and one project adapts the community college final for use in the high school. In order to be eligible for credit the student must earn a minimum grade of "B" or better when the test is offered as the high school final (six projects), and "C" or better by two projects.

Basic Skills Issues

There are two groups of students for whom basic skills is an issue. The first is vocational students, the second English as a Second Language (ESL) students. Historically, students placed in vocational courses in high school have not performed at the same academic

level as those in the college preparatory program. Yet, as 2+2+2 participants they are suddenly expected to be prepared to do college work. Weak basic skills and the subsequent need for remedial coursework could become an obstacle to successful participation in the 2+2+2 program. It is essential that students come to understand the need for those courses and be enabled and encouraged to complete them. Second, ESL students may be enrolled in vocational or college preparatory programs. They have the same need for basic skills competencies to college level and the student services to enable them to succeed in their college coursework.

The basic skills abilities of 2+2+2 students is an important issue because if these students are to be successful in postsecondary education, basic skills as well as vocational skills, are necessities. The issue of adequacy of basic skills is being addressed primarily at the community college segment and by matriculation practices, however the implementation of matriculation programs in community colleges has directed attention to the basic skills levels of high school and college students, and one outcome has been to require that project students perform at certain required basic skill levels before they enroll in or are given credit for articulated classes. Both high school and university segment projects have reported relying on existing matriculation services to identify students who need improvement. Some of the typical methods used to address the issue of basic skills were 1) to include basic skills requirements in the high school program course outline, this type of program guarantees a certain level of competency for the student to articulate to the next level; 2) to provide secondary school 2+2+2 participants with the opportunity to take the community college basic skills assessment early so that the need for tutoring or additional basic skills classes can be identified in the junior or senior year of high school; 3) students are encouraged to complete the general education

academic track at the community college before transfer; and 4) Learning Assistance Centers are available for students on both university and community college campuses.

Sharing of Facilities

The sharing of facilities is often a positive outcome of an articulation program. Projects reported some intersegmental sharing of facilities, each of them uniquely adapting their particular resources to the needs of the other segment involved.

Among high school/community college articulation activities, the sharing of facilities has involved the offering of college level courses by community college faculty on high school campuses for either high school or college credit. Projects reported giving the challenge exam and hiring qualified high school faculty as part-time instructors or counselors at the community colleges as the "sharing of facilities."

The most extensive example of facilities sharing is that of the Statewide Nursing Program and a community college which provides them with office space and furnishings for regularly scheduled office hours. The Statewide Nursing Program provides advisement and orientation for prospective students at the community college, including students currently enrolled in nursing programs as well as registered nurses in the community. For the ROP, the community college's Nursing Learning Laboratory is open to the Certified Nurse Assistant class for classroom practical experience in the evenings twice weekly throughout the school year. This sharing has continued successfully during the three years of funding. The sharing of facilities has not reportedly become more prevalent as 2+2+2 programs have developed further.

Communications

Inter- and intrasegmental communication is the lifeline of the articulation process. Many different methods of communication among articulating schools were utilized, and the need for maintaining ongoing communication was often reported by Project Directors as "critical." Those projects which had developed articulation programs prior to initial funding were able to take advantage of established Articulation Councils or build upon existing institutional communication networks to coordinate their articulation efforts; but all projects reported formal and informal meetings with their own staff, faculty, and counseling and with their counterparts in the collaborating institutions.

These last mentioned contacts were considered "most valuable" by faculty who rarely had had the opportunity to sit down with their colleagues to discuss curriculum and who were not always aware of what was being done in the other segments. Intrasegmental communications were also productive. One need identified by the universities, for instance, was for a statewide articulation newsletter so everyone can be made aware of all articulation efforts on each campus and throughout the system.

Numerous meetings were used to better acquaint faculty and counseling staff with the concept of articulation as well as to explain the goals of the 2+2+2 program. Project directors reported that they found this to be an effective method of gaining active support and participation.

Outreach Activities

Outreach to potential students was identified early in the program as one area in which most of the projects needed assistance. The first year, 1988-89, those projects which did not initially have a firmly established 2+2 and those which had not completed the articulation process for the third "2" were hesitant to undertake extensive outreach activities for programs which had not yet been completed, although almost all projects attempted some form of outreach. The program monitor discussed outreach techniques during the site visits, and during the May 1989 "debriefing" meeting the California Community College Chancellor's Office provided information to project directors about effective strategies for outreach.

The projects were aware of the need for outreach activities and focused their efforts in this area in 1989-90. At the December 1989 Project Directors' Meeting in Sacramento there was a generous sharing of ideas and materials for outreach. Camera-ready copies of materials were made available by one of the projects. Posters, brochures, flyers, student program guides, and classroom door cards and stickers were among the materials exchanged. Enthusiasm was generated and outreach efforts were intensified as may be seen in Display 3.

While outreach was directed to all segments, most efforts concentrated on the high school and community college. Within these institutions, career center personnel, counselors and faculty were introduced to and trained in the 2+2+2 process and procedures, and received copies of the printed materials, project manuals/handbooks, and other program-related literature. In addition to the abundance of printed materials developed and distributed, personal contacts with students were also a part of outreach and included, for example, birthday cards, welcome back to school letters and special event celebrations for participants. Several projects have

produced and distributed 2+2+2 videotapes designed to promote the project and attract student participants. The videos were played at the Project Directors' meetings and are very effective. Parents were introduced to 2+2+2 programs at Parent Nights by newsletters mailed to their homes and by letters congratulating them on their child's success in completing a course for which they earned college credit.

The community college was usually the hub of the outreach activities. As the projects moved toward institutionalization, outreach to students has increasingly been integrated with regular institutional outreach activities and programs such as EOPS, Workability and CALSOAP. Even though that may be more economical, the 2+2+2 could be in danger of losing its identity as a special program.

Display 3

Outreach Techniques Used in Each Segment
1991-92

Outreach Techniques Reported by 14 Career Education Projects	High School	Community College	University
Printed materials			
Flyers	11	10	6
Brochures	14	14	10
Newsletters	9	7	4
Posters	7	4	2
Presentations/ personal contacts			
Career Fairs/Days	14	10	3
College Fairs/Days	7	11	9
Classroom presentations to students	14	12	5
Meetings with teachers/instructors	14	13	10
Counselor in-services	13	13	6
Administrators	14	13	8
Articulation councils	11	13	9
Administrative boards	7	6	-
Business/industry	11	13	7
Other departments	7	8	3

Student Support Services Provided

The majority of the projects include coordination with and involvement of student support services, primarily counseling at the community college level. Counselors are now reported to

be involved in all projects as recruiters and/or as advisors. Some projects enjoy dedicated counselor support, that is, counselor(s) assigned solely to the 2+2+2 project or to all articulated programs at that institution. More often, specific counselors are identified and trained to provide support to the articulated programs, in addition to their regular responsibilities. Faculty and counselors in the secondary school and faculty in the four-year segments are also involved in advisement in some projects.

Frequently the student support services identified as those serving the career articulated program students are those services that are routinely provided or available to all students. For example, more than half of the projects reported relying on the community college matriculation services and transfer centers. Special tutoring programs, special orientation sessions, special clubs and program-specific support groups are the most often mentioned additions to routine services.

It was noted that at the secondary level there is a lack of established student services because of fiscal constraints. Where there are established student support services such as tutoring, the services have frequently been provided by specially funded programs. Student support services merit continued attention after the project ends as an important tool for retaining high school students both in school and in the program and easing the transition to college.

With the exception of tutoring and designated counselors, for the most part student services for the 2+2+2 participants were extracted from the existing student services. So, matriculation services (orientation, assessment, placement), Financial Aid, EOPS and Learning Centers were all available for the 2+2+2 participants at the community college level. The university offered the 2+2+2 participant the same array of services available to all students.

If optimal coordination with student support services remains to be accomplished (particularly in the areas of developing individual student education plans, career guidance, job placement, and student services articulation of all three segments), it is because the projects have not wanted to duplicate existing services solely for the 2+2+2 program.

Identification of Student Participants

In order to fully evaluate the 2+2+2 programs, it is necessary to describe the characteristics and monitor the educational progress of students participating in the programs. Central to this activity, however, was the definition and identification of "students participating in the program." Project Directors assisted the statewide evaluators in creating such a definition at the initial Project Directors' meetings. They agreed that a 2+2+2 program participant would be defined as one who:

1) is enrolled in an articulated course which is part of the 2+2+2 program (at the time of initial identification),

2) intends to proceed to the next segment (community college or four-year college/ university), and

3) is knowledgeable of the 2+2+2 program options and opportunities.

Thus, because of the second criterion above, a program participant would initially be identified in the high school/ROP or community college levels. Projects were provided with examples of student identification forms which could be used as student statements of intent to participate as well as to collect student demographic information.

In addition to the agreed upon requirements for a program participant, the projects reported a variety of other conditions in effect. Eight projects required a teacher or counselor recommendation or approval for a student to be designated as a participant. Six projects required a grade of "A" or "B" in the articulated course; two required a "C" or better. One secondary partner added a good attendance record to the grade specified. A two year ROP program did not consider the student eligible until the second year. Another project did not have the student sign the statement of intent form until the end of the year at which time the student committed to taking the challenge exam. Eleven projects stated that there were no limitations on the number of students admitted into the program; two reported a limit and one of these limited the number to two hundred students.

Student Follow-up

As required, by the end of the second year all projects reported that they had created mechanisms by which to identify program participants and were monitoring students' progress. A process is in place at the statewide evaluation level to receive this student information from the educational institutions which are responsible for providing student participant demographic and educational progress information at the end of each semester. This has necessitated the exchange of student information among each program's participating segments, and has reportedly been problematic for some schools not equipped for or accustomed to student tracking processes. As the number of program participants has increased so has the need for the implementation of more sophisticated student follow-up mechanisms at the project level.

Student follow-up mechanisms have taken time to develop. Most of the projects have lacked experience in tracking and Management Information Systems (MIS) and have had to learn. At present, there has been little student participant movement between segments, so each school has been responsible for monitoring their own students. For the most part, the community colleges have coordinated the collection of the student follow-up information.

The student follow-up or "tracking" requirement has been complicated by the following: **First**, the process seems to break down because there is no consistent student identification number in use, i.e., social security number, that could be used to track students as they move through all segments. **Second**, for large scale, long-term tracking, a computer-based process is both efficient and labor-saving; but the projects reported that tracking did not have a high institutional priority, or schools lacked the technological capability or skills needed to implement intersegmental tracking. Several projects tracked manually and, while this was adequate for the term of the project, it was so demanding that the chances of it continuing after funding ends are bleak. An alternative to computerized tracking has been to ask the students to self-identify to registration officials as they move from one segment to the next. At least two of the projects have accomplished this by supplying spaces on the community college application for students to indicate that they have been 2+2+2 participants. Instructors and/or counselors can then follow-up with these students. The procedure has not been in place long enough to evaluate its effectiveness. **Third**, at this time students do not seem to be identifying themselves as 2+2+2 participants at the next segment to any measurable extent, even when the awarding of credit may be at stake. This behavior further reinforces the need for computerized tracking and follow-up.

Several advances were made by projects which have MIS capability. For instance, one

project included as an objective the design of a 2+2+2 tracking system as a dependent program to link with the Statewide Student Follow-up System (SSFS), which is already in place for vocational programs in some community colleges. It is expected that this will be an effective and cost-efficient option for 2+2+2 projects using SSFS. Another project initiated and has institutionalized a comprehensive online student follow-up system not limited to 2+2+2 students. Such a program could be adapted by other institutions with that capability. Individual project directors have used their personal computers to develop tracking for counseling and follow-up purposes and to generate personalized communications with students and their parents.

To get an idea of the flow of students and where they actually were enrolled, one of the established projects in Business did a follow-up on the secondary participants who had been recommended to take the challenge exam, to find out where they were enrolled in Fall 1990. There were 328 students contacted by survey and by phone. The study found that 54 percent were still enrolled in secondary schools. The balance were:

- Enrolled at the participating community college, 28 percent, n=92.
- Enrolled at another community college, 9 percent, n=28.
- Enrolled at participating university, 2 percent, n=7.
- Enrolled at University of California, 2 percent, n=6.
- Enrolled in other four-year college or university, 2 percent, n=7.
- Working, 13 percent, n=43.
- Could not locate, 6 percent, n=20.

The participants in this 2+2+2 project seem to be continuing in school even though they may not have earned credit by exam or were no longer enrolled in a 2+2+2 class.

The projects are especially aware of the costliness of the follow-up procedure and the shortfall of funds to continue tracking beyond the 2+2+2 project term. For this reason tracking was cited most frequently as the aspect of the project which may not continue in the same detail after funding ends.

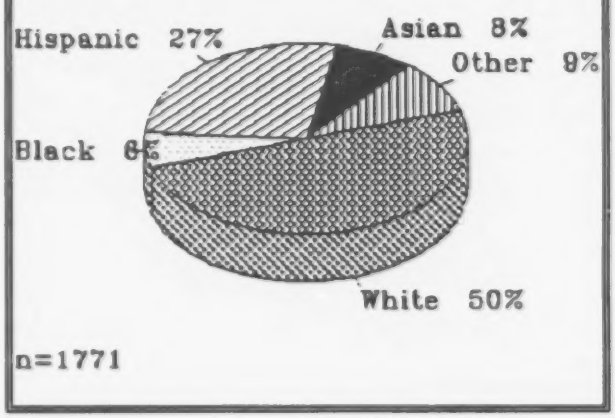
Student Demographics

By the end of 1989-90, information about the students participating in 2+2+2 programs was available (Appendix B). When considering these figures, the reader is advised to take into account the fact that tracking data for one project was not complete for Spring 1991. Even so, there has been demonstrated growth in the program.

- The first semester of tracking, Fall 1989, seventeen projects reported a total of 1356 participants, 725 in high school, 101 in ROP, 313 in community college, 2 in university and 17 in adult school. This included program participants (n=144) from the prior year who were now enrolled in non-articulated (non-2+2+2) courses.
- The last semester of tracking, Spring 1991, fifteen projects reported a total 2025 student participants, 1115 in high school, 298 in ROP, 327 in community college, 6 in a university and 118 in adult school. This included program participants (n=134) from prior years who were now enrolled in non-articulated courses. (Remember, this data is not complete because one school submitted incomplete tracking.)

- Most of the participants were in the secondary segment. There has not been enough elapsed time for much movement to occur from one segment to the next.
- Program participants were most often young. The initial semester of tracking, Fall 1989, 27 percent were 17 or under. By Spring 1991, 47 percent were in that category and a total of 68 percent were 18 or under.
- Gender distribution percentages changed from 40 percent female in Fall 1989, to 56 percent female in Spring 1991.
- 62% of the students in Fall 1989 and 65% in Spring 1991 planned to attend a university or get a bachelor's degree. Each semester, 17% intended to earn an associate arts degree.

Display 4
Ethnic Distribution of Student Participants
Fall Semester, 1990



The overall ethnic distribution of students as reported for Fall 1990, the most recent semester for which complete data is available, may be seen in Appendix B. A more comprehensive picture of ethnicity emerges when the ethnic distribution by project for that same period is examined. Of the fifteen projects, five were characterized by ethnic distributions that were more that 50 percent White and three were 50 percent or more Hispanic. In the rest of the projects the ethnic mix was such that no single group comprised 50 percent. The percentage of Blacks in all

projects ranged from zero to 17 percent; that of Asians ranged from 4 percent to 27 percent. Since Fall 1989, the percentage of Whites in the program has increased, and the percentage of Hispanics has decreased; the percentage of both Asians and Blacks each semester varied little.

There was no one subject area that acted as a magnet for students of a given ethnic background. In nursing, for instance, one project was 74% White, the second was 57% Hispanic, and the third was 27% Asian, 26% White and 20% Hispanic. The percentage of students in a given project seemed to be more reflective of the ethnic distribution of the population of the school rather than the attraction of a given subject area.

Student Satisfaction

During the site visits, the evaluator interviewed students both individually and in classes to ask their opinion of the program. Generally, they were happy to have found out about the project and said it was "a good thing" and would "really save me time". They were overwhelmingly positive. Teachers often indicated that certain students might never have considered college without the program. Participants had their aspirations raised and were provided with tangible evidence that they could perform college work. The classroom visits showed a high level of interest and enthusiasm in the 2+2+2 classes and they also demonstrated the dedication and involvement of teachers.

During one site visit, an ROP nursing class discussed their career plans. Students were very aware of the pathway from the ROP through the bachelor's degree in nursing. They knew they were preparing for well paying jobs by completing the ROP program and they were certain of being able to earn money to go to college. They also realized that shift work and weekend

hours would enable them to continue their educations without the financial worries other students experience. In this particular project there were some reserved places for qualified 2+2+2 participants in the impacted community college program, and you can believe the students knew about that!

Students asked some provocative questions. Several complained that they did not think it was fair that they could not transfer the college credit earned to any college they wanted to attend. "If it's college credit, its college credit!" Students also asked why there was not going to be more money next year, and wanted to know whether the project would continue. Some interesting discussions ensued.

To obtain additional information, a survey was given to a small sample of secondary classes. A number of students reported that they were working, 37 percent, and the majority of these worked 15-25 hours a week. More adult school students worked than high school students. These are some of the responses given when students were asked if they thought the 2+2+2 program has made any difference in their futures.

- "It makes more sure of the career I really want to take in the future and I'm actually experiencing nursing skills."
- "Helped me get an idea... if I wanted to do it or not."
- "I had no plans for my future before this."
- "It has affected my career decisions to encourage me to take a turn to the business world."
- "It has helped eliminate a lot of wasted time."

- "It has given me a head start and a lot of advantages that other applicants don't receive."

Community college students were also very appreciative of the opportunities presented by the program. Their enthusiasm was demonstrated by their willingness to participate in the program as 2+2+2 peer advisors, tutors and recruiters both on their home campus and at the high schools. They added an effective element to the outreach effort.

Successes and Barriers: Extent to Which Project Objectives Were Met

There was a range of progress and efforts among the projects as well as a variety of pathways traveled towards implementing programs. Each project was unique.

Faculty participants repeatedly expressed that increased faculty and staff communication among the segments was the most rewarding outcome of the project. These exchanges resulted in substantial progress in the articulation of curriculum and the implementation of outreach strategies and materials. All projects, with one exception, had completed their curriculum articulation objectives. Additionally, faculty and staff frequently expressed a sense of professional renewal and enthusiasm as a result of the opportunities for intersegmental communication and cooperation provided by the 2+2+2 programs. The statewide meetings for Program Directors have provided a means for the sharing of ideas, especially in regard to outreach, and project participants have expressed appreciation for these opportunities. Faculty became more aware of competencies needed for students matriculating to the next segment and also of the problems faced by their colleagues in other institutions.

Project Directors were asked in their annual progress reports to identify any barriers to program implementation and the completion of their program objectives. The most frequently mentioned barrier was lack of time in the first funded year (December 1, 1988, through June 30, 1989) for adequate planning to begin such a comprehensive program. Start-up activities were slow to begin in some projects as levels of prior accomplishment differed among projects at the beginning of the first funding year. Some projects had thorough groundwork completed and had extensive experience in articulation programs, and those projects were able to progress more quickly. Many needed to strengthen their original 2+2 program and were just beginning to extend to the third "2" segment. And some project objectives were found to be overly ambitious and had to be revised mid-year. One project was unable to make adequate progress in meeting its objectives and was denied second year funding by the Advisory Committee.

These differences among projects carried over into the second year with some projects demonstrating accelerated progress as they gained experience in articulation and others proceeding more deliberately. At the end of the second year, two projects did not apply for third year funding. For them, one barrier was a personnel problem and a lack of institutional commitment to the project; the other barrier was described as a lack of cooperation by a participating segment. A third project was denied third-year funding by the Advisory Committee when an administrative change resulted in lessened support of the project objectives.

Projects reported learning that articulated programs require labor-intensive, complex, and time-consuming efforts, that is, continuous nurturing. Scheduling of meetings was sometimes difficult due to the differing schedules of the three segments. Many individuals including faculty, student services personnel, and administrators must be included in these activities,

making scheduling more complex. This difficulty in scheduling continued through the length of the project. Also, the lack of coordination of school calendars sometimes caused yearlong delays of program component implementation. When a personnel change occurred, as frequently did, progress and momentum were interrupted. The projects were asked to address this in 1990-91 by documenting program processes, procedures, and overall operation in a handbook or manual.

An ongoing concern frequently expressed by Project Directors each year was the fact that high school students are allotted increasingly less elective time for vocational courses in favor of general education coursework. On the other hand, it was acknowledged that potential 2+2+2 students will need to complete college preparatory coursework and develop basic skills and that this dilemma will need to be addressed in future planning. Progress on these programs is slow, 2+2+2 is a misleading label, most students are part-time and student movement is slow between segments. 2+2+2 does not equal six. There are many "stop-outs."

More activity took place between the community colleges and the high schools than between community colleges and four-year colleges and universities. This could be because these projects had more experience in articulating with high schools or because community colleges may not be as accustomed to articulating vocational programs with four-year colleges and universities. During the second year there was an increased articulation effort with the universities.

The annual progress report form asked Project Directors at the end of each year to list the objectives of their project and to indicate whether those objectives had been completed, were in progress or not addressed. A review of those responses reveals that, after the first year, most

of those objectives were achieved. Curriculum articulation efforts were more frequently achieved than outreach objectives. Outreach activities were most often delayed. Finishing the last details of articulation agreements and printing brochures were the most often reported activities yet to be completed.

Project Directors again listed each objective at the end of the second year along with completion status. Again, most objectives were achieved; some were found to be ongoing. Curriculum objectives were most frequently reported as completed. Outreach objectives were usually completed or partially completed.

Most articulation objectives were reported as completed, and those that were not were considered still in progress. Projects generally met the targeted number of students to be enrolled in the program although outreach activities were sometimes limited by institutional cutbacks in funds. Several projects had yet to complete their dissemination objectives, but materials dissemination and presentations were scheduled for Fall 1991.

Unanticipated Outcomes

In their final reports, the project directors discussed the unanticipated outcomes of the 2+2+2. It was noted that the project has been beneficial to **all** students enrolled in articulated courses, not just those identified as program participants. Reportedly, the interest of students and the number participating exceeded the expectations of several projects. One Nursing project had not anticipated the increased number of underrepresented students attracted to their 2+2+2. The reported percentage of Hispanic participants went from 33% in Fall 1989 to 57% in Spring

1991 in that project. Another project had not foreseen the positive parental response and support for continuance of the program.

Additional unanticipated outcomes found were the overall acceptance of the 2+2+2 by all segments, increased department visibility on campuses and in the community, and the articulation agreements which helped to maintain enrollments in vocational courses at the secondary level.

Institutionalization

One of the objectives of the third funded year was to focus on the transition to an institutionalized program. During the Project Director's Meeting in Fall 1990, the projects reported that the 2+2+2 would indeed continue after funding ended, although it might become necessary in some instances to scale back some activities or services. The community colleges reported that institutional resources would be made available but expressed concern that the high schools which had experienced stringent cutbacks might not be able to commit personnel to the 2+2+2. Limited funds were expected to preclude the rehiring of some of the personnel presently supported by the grant, for example, an outreach counselor, articulation personnel, and tutors. The projects were most aware of the detrimental effect of the impending loss of funding for the project coordinator position, the person who "kept interest alive in the program", kept it on track and on schedule. Between the fall meeting and the spring site visits, the budget shortfall became more severe and project participants were disheartened. Morale at the secondary level in particular plummeted. Teachers who were not sure of being employed the

next year found it hard to concentrate on the future of the 2+2+2, but nonetheless continued to work with the relevant staff.

In the final report of the final year, Project Directors were asked to list any barriers or problems with institutionalization which may have been encountered and how they worked around or with them. Some reported experiencing ongoing problems with the process of articulation, such as resolving territorial issues concerning appropriate and sequenced division of curriculum content among segments. The development of clearly defined competencies, because of the different texts and equipment, was listed as a problem. These were overcome by giving in-service training to faculty and "talking their problems through". "The philosophical opposition to providing credit for high school courses" was a concern, and mention was made of how tedious and cumbersome the articulation process was at the university level, "where program modification must go through many layers prior to implementation".

Barriers to institutionalization of the outreach component included the reluctance of high school administrators to commit personnel for 1991-92, the overloading of high school counselors with responsibility of 2+2+2 recruiting, tracking and retention activities,and financing for brochures and mailings.

Lack of funding was the most often mentioned barrier to institutionalization. Yet, as one project stated, "The parts of the project made indispensable...were institutionalized regardless of cost".

Conclusions

Three years ago, the notion was to find, develop, and implement 2+2+2 programs on a pilot basis. This pilot project found that charge to be extremely complex to carry out, but the benefits and successes to the participating segments and students are of great value. The value of the program will continue to accrue as a result of the efforts of the last three years. The 2+2+2 attempted to cover new ground, linking career education at the secondary level, through technical and liberal arts coursework at the community college, to the university, on a scale that had not been previously attempted. The projects encountered more difficulties than foreseen, and technical support for their effort, as was soon evident, required an extraordinary commitment of time by the community college program monitors, who were instrumental in the achievements of this project.

The addition of the university segment to existing 2+2 career education programs was more troublesome than anticipated. It was expected that the projects would develop a seamless transition from one segment to the next which would consist of clearly defined pathways characterized by articulated curriculum, outreach, and student services. It was also thought that the first year would be for planning, the second for implementation, and the last year would be concerned with finalizing the 2+2+2 model, including completing the development of documentation materials and resources for dissemination, and institutionalization. The projects for the most part did achieve these objectives, but in their own time, to varying degrees and in disparate ways.

From the beginning of the program there was an assumption that the existing 2+2's were complete and in place and would require minimal attention for maintenance purposes while

serving as the basis for adding the other "2". What was found instead was that the initial 2+2's required time-consuming additional work, nurturing and review. So that while new linkages were being explored and established, the older ones had to be carefully maintained. This was especially characteristic of the high school-community college connection. In fact, the maintenance and strengthening of the initial 2+2 as the basis for the third "2" was an important outcome, or achievement, of the project.

Characteristics of Successful Projects

Prior studies (see Appendix C) have documented the need for articulation, suggested best ways to implement articulation programs, and detailed the advantages of articulation for schools and students. This study has confirmed the findings of those earlier reports. Although the focus of this project was to demonstrate or test the feasibility of extending existing 2+2's to include all three educational segments, certain commonalities with the earlier studies became evident. Among these was the identification of certain predictive prerequisite qualities of success which are listed below.

- **An entrepreneurial director**. Since many of the projects were breaking new ground and encountered a variety of obstacles, the directors who were innovative in their approach could forestall or circumvent problems and were more successful in completing objectives in a timely manner.
- **Administrative support within each segment**. The effective administrator acted as consultant and enabler and was an active part of an intersegmental

administrative team that went beyond token program support to provide top level leadership and ensure the quality of the project.

- **A participatory advisory committee consisting of representatives of all segments.** The complete committee included employers, parents and students as well as educators.
- **An articulation council** or some other framework which defined institutional articulation policies and procedures. Some councils provided a facilitator to assist in accomplishing articulation. The more effective councils included all three segments actively taking part, and were not limited to just the subject area of the project.
- **Faculty who acknowledge the need for articulation**, were not "territorial," that is, did not insist that only their segment could teach a certain skill, and were willing to spend the time and energy to work out agreements.
- **Student services programs** at the community college which provided the counselor-to-counselor linkage with the high school, and coordinated and integrated services such as assessment, EOPS and financial aid, with the 2+2+2.
- **An institutional commitment** on the part of the participating segments to the value of the project so that top and mid-level administrative and financial support continued after funding ended.

Before attempting to establish intersegmental linkages, it was found to be important to prepare for articulation by examining and evaluating existing curriculum and defining skill levels so that courses were ready to be articulated. As one project director said,

> Make very sure that your department reviews their program before trying to articulate it with the other levels. You may find out that their programs are better than yours...You are not the only ball game in town. Be flexible!

Successful projects had reevaluated their own curriculum and adjusted course content and requirements. Faculty who had reached agreement about their own course content were better prepared to meet and confer with faculty from other segments to determine the feasibility of the area of proposed articulation and to identify subject area competencies and equivalencies.

The presence of some structure or existing articulation history, procedures, and policies, to deal with articulation within each institution is advantageous. The universities had established networks with the community colleges because of their experience with general education certification and the transfer of credit, but it could not be assumed that there were existing procedures and processes in place for developing articulation of courses and programs. It was found that individual university articulation officers were very effective in their support of the goals of the 2+2+2 and used their expertise to expedite articulation. A strong influence in the success of this linkage was the attitude of the university department involved. Discipline areas with low or declining enrollments had incentive to articulate. Indeed, some of the most successful projects were in this category. Impacted university departments and programs and those which were driven by subject area accreditation requirements were often not permitted or lacked enthusiasm for involvement in articulation beyond the existing transfer requirements. However, the communications channels established by the 2+2+2 articulation efforts remain in place and are of value for continued intersegmental exchange of information.

The community college participants initially displayed the full range of structures for curriculum articulation, from those which had established documented policies and procedures,

assigned articulation coordinators and functioning transfer centers, to those which had not even yet developed a policy for articulation. The less structure, the more difficult it was to complete lasting articulation agreements. As the 2+2+2 program progressed it became obvious that the community college was in the best position to broker the link with the other segments, as both the secondary and university funded projects found it difficult to work through the intervening bureaucratic layers to reach their twice removed partners.

Outcomes

The project demonstrated that it was possible to accomplish the objectives of 2+2+2 under a variety of circumstances and in a multiplicity of ways. 2+2+2 became a functioning reality. As a result of the funding for this project, along with improved communications and understanding, it was clear that mutual professional respect and cooperation have grown apace between all levels. The overall result is an enhanced articulation program among all segments. Curriculum has been revised, reformed, and improved. Instruction has been energized. As a result, a cadre of experts in both the mechanics and politics of 2+2+2 articulation has been established which can provide assistance in the development of other 2+2+2 programs. This group of high quality 2+2+2 projects is so diverse that they can serve as models for schools interested in extending, improving or initiating nearly any phase of a 2+2+2 program. Furthermore, sets of materials for promoting 2+2+2 have been developed which can be adapted for use by interested institutions.

Student success is another positive outcome of the project. Participating students have become aware of career options and pathways, and education is coming to be viewed as goal-

related and meaningful. It was repeatedly reported that students who would not otherwise have gone to college have been "turned around," and that underrepresented populations are seeing new opportunities and experiencing success.

Recommendations

1) This project has demonstrated the effectiveness and value of articulating both vocational and academic courses, and vocational and academic programs, among the three segments. However, these efforts require resources. It is recommended that such efforts be expanded and continue to be funded by the California Community College Chancellor's Office.

2) Because of the prohibition of using federal funding to make the linkage with the baccalaureate-granting university, it is recommended that State resources be made available to the community colleges for continued development of the connection of the 2+2 with the third 2 (university level) since it is at the community college that the alignment is most critical.

3) It is recommended that the work of the 2+2+2 dissemination project be extended, perhaps in conjunction with the Tech Prep Resource Centers (See Appendix C), to provide expertise in, and encouragement for, making the linkage to the baccalaureate degree.

4) To measure the long term impact of the 2+2+2 projects, tracking of student participants needs to be continued to fully determine the impact of the program on participating schools and students. It is recommended that the California

Community College Chancellor's Office fund those projects with comprehensive, well-functioning student follow-up programs and evaluate the long-term impacts on students Further, it is recommended that the project participants be surveyed annually to identify and evaluate the later effects and implementation status of the 2+2+2 program.

5) To facilitate intersegmental follow-up, it is recommended that the State administrative office of all three segments support the notion that social security numbers be phased in as universal student identifiers at all segments.

6) It has been demonstrated that the university systems are deliberate in making changes to curriculum. It is recommended that the Chancellor's Offices of the State University and University of California systems review the procedures for articulation and consider the possibility for streamlining the process.

Section 2

Teacher Education Projects

1989 - 1991

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TEACHER EDUCATION PROJECTS

Description of Projects

This section describes the progress of the eight Teacher Education projects selected by the Intersegmental Advisory Committee to conduct 2+2+2 activities designed to encourage underrepresented minorities to prepare for and enter teaching careers. These eight projects were funded for a total of $240,890; individual project grant amounts ranged from $26,712 to $36,657. The educational institutions were funded from November 1989 to June 30, 1990, after which time they could submit proposals for continued funding for an additional year. All of the projects applied for and were awarded continued funding through the RFP process for 1990-91. The participating educational institutions, and the amounts for which they were funded are included in Display 1 (page 7). The projects had the following characteristics:

- Six of the projects were coordinated by community college districts; one by a State University Foundation; and one by a State University Auxiliary Services.
- At the time of initial funding, the projects had established 2+2 articulation agreements and in some cases the rudiments of a 2+2+2.
- Three of the projects were linked with Child/Human Development in the community college and included articulation with ROP courses as the first "2."

- Four projects were connected to college preparatory programs in the high school and directed toward general education requirements at the community college and then toward transfer to a variety of majors at the four-year institution.

Although the projects began at different experiential stages of program and articulation development, they were all committed to condensing planning, outreach and, in some instances, program implementation into the initial year of funding, and then refining, implementing and institutionalizing their programs in the second funded year. Their achievements under these circumstances were considerable.

For the purposes of evaluation, one of the original 2+2+2 projects was included with this group since it is a teacher education project (referred to earlier as the "upside-down curriculum" project) with a strong emphasis on outreach to the underrepresented.

Identification of Student Participants

As with the other group of projects, student participants in teacher education were identified and monitored for the purpose of program evaluation. It was recognized from the start that during the first year, because of the nature of these projects and their short timelines, they would require special criteria to define a program participant. On February 16, 1990, a teacher education project directors' meeting was held to collaboratively arrive at such a definition. It was agreed that the teacher education projects would consider a program participant as one who has been mutually identified by the student and the program staff as one who intends to earn a teaching credential or complete the educational requirements for a teaching career, AND has participated in program activities.

The projects used a number of resources to help in identifying possible program participants. High schools identified potential applicants through club participation, and teacher or counselor referral; community colleges identified students through club attendance, signing up for a teaching-related activity, and referral from a Future Teacher Tutorial Center; and some students self-identified by completing an application for an education course. Additional target populations were bilingual people working as instructional aides in the K-12, clerical support staff, child care providers, and bachelor's degree holders who had been interested in teaching, but had redirected their career goals at a time when there were few available jobs for teachers. Projects monitored the numbers of people who were involved with program activities during the first year, but no formal tracking of individuals was required at that early time..

Tracking of student progress began in Fall 1990. In consultation with the project directors, another criterion was added to the definition of a program participant. It was also required that a participant be enrolled in one of the participating schools during the second funded year. For the teacher education projects, student follow-up was difficult because of their lack of experience both in the collection of student demographic data and in reporting educational progress information. Most projects were unfamiliar with management information systems or lacked access to them. There was not enough time for intersegmental movement of students to occur so follow-up was primarily a matter of each school keeping records of their own students and the funded agency compiling that data for this report.

Student Demographics

During 1990-91, information about the students in the teacher education projects became available. In the first semester, Fall 1990, there were a total of 1165 students who fulfilled the definition of a program participant. In Spring 1991, 1200 students were reported, of these 1001 were returning students and 199 were new to the program. Incomplete and confused data was supplied by several projects; of these, two were not able to supply clarifying information, so the count of program participants may not be as accurate as hoped.

- The majority of participants were in high school, 69 percent in fall and 64 percent in spring. The rest of the students were enrolled in the community college with the exception of a few who were at the four-year university.
- Most of the students were young, about 57 percent were 18 years old or less, and there were students distributed throughout the remaining age categories.
- The projects were successful in recruiting the underrepresented. About 40 percent of the students were Hispanic, 36 percent white, 7 percent black and 6 percent Asian.
- More females were participants (73 percent) than males (27 percent). Most of the males were concentrated in the project focusing on teaching technology in the high schools.
- About 20 percent of the participants indicated they intended to complete a bachelor's degree, and an additional 38 percent planned to receive a teaching credential. An advanced degree is the goal of 20 percent (fall) and 24 percent (spring) of the students.

Surveys of a sample of teacher education participants illustrated that they thought the class made a difference to their futures.

- "I have a better chance when I go to college."
- "I never thought of being a teacher, but I love the kids and now it has become as option."
- "I know I want to counsel children and major in psychology."

The community college students interviewed during one of their club meetings revealed their dedication to teaching as a way of helping others. A recently diagnosed dyslexic adult was interested in special education because of the special insights that he had. A mother who had been working as a bilingual aide had never thought she could make it in college, but now stated that she knew she could succeed in college and could do more for the children as a teacher. This group of students was very supportive of each other. They demonstrated the effectiveness of the teachers clubs as a tool for meeting the needs of the 2+2+2 students.

Articulation Progress

In the achievement of progress in articulation the projects demonstrated the importance of several factors which had been shown to be critical in the original group of projects. Evidence of ongoing high level leadership support and commitment was demonstrated by signed agreements at the administrative level. There were often established advisory committees and/or articulation councils. Additionally, project-specific advisory committees were organized. These groups were intersegmental and usually included representatives from faculty and counseling so that a true non-hierarchical relationship enabled the discussions which lead to the development

of articulation agreements. By the end of the second funded year all of the projects had an ongoing involvement with such an intersegmental committee.

As was seen with the original group of 2+2+2's, articulation proceeded in three established patterns. **Course-to-course articulation** was reported by all projects. Once again there seemed to be more activity in this regard between the high school and community college, with four projects reporting articulation accomplishments with ROP's and two others specifying course to course articulation in areas such as English A, precalculus and drafting.

Program articulation, which consists of articulating a full curriculum sequence and may include both required general education and vocational courses, was most often developed by those Teacher Education projects which were based in Child/Human Development areas. One project which focuses on vocational teachers has also developed an ROP linkage where transfer of credit is based on the measurement of competencies. Program articulation was reported in all segments but was more likely to be found between community colleges and the four-year institution.

The third type of articulation, the **college preparatory program**, was reported by four projects. Two of these covered the high school to community college linkage and two, via general education, the community college to university connection. **The projects often used more than one identified type of articulation.**

Two highlights of the teacher education articulation effort were reported:

- **The development of articulated curriculum for courses such as Careers in Education or Careers Working with Children, which illustrate the pathways,**

requirements and career options for students. Five projects have now completed the development of such courses.

- **The development of summer bridge programs, leadership camps, and summer institutes providing high school and community college students with valuable exposure to another segment of education and to teaching careers.** Four projects have such programs.

2+2+2+1

The Teacher Education projects could more correctly be identified as 2+2+2+1 (or more) since the fifth year is a requirement for credentialing, and additional coursework is necessary for those who may want to teach in community colleges or the university. One project has developed guaranteed admission to the fifth year for eligible 2+2+2 students. Five projects reported disseminating information about the need for the fifth year and one project articulated only to the bachelor's degree. One project had not yet addressed the fifth year, and another was consulting with university staff to develop "Pathways" documents.

The need for financial planning for students for the fifth year was discussed during an interview with a small group of student participants hoping to be admitted to the university. They were wondering how they could afford it. Most of them were working in some capacity in schools. The credential program, in this instance, is full-time and offered in the daytime. Thus, students are faced with the dilemma of how to continue to work to support themselves and their families while earning the credential required for their career. These students face another problem; they have a bachelor's degree which disqualifies them for undergraduate federal grant

programs, and yet because the fifth year is not recognized as a postgraduate program, the students do not qualify for that category of financial aid. Reportedly, one university offers a "certificate" in education which then creates eligibility for a $7500 grant. The majority of the projects have yet to deal with the issue of finances. Concern about the financial considerations of the fifth year will be moot as more 2+2+2 participants move through the system. Clearly, some accommodation will be needed for low income students who could be blocked from the teaching credential by this barrier.

There was some awareness of the problem. One of the projects has an existing school district/community college program, AIM-to-Teach, that enables the student participant to take lower division transfer level classes at district sites in the evening and is tied in with a state university teacher diversity model, INSIDE TRACK. This program is supported by 1) the Fund for the Improvement of Post Secondary Education, 2) in-kind support from the university School of Teacher Education, and 3) AIM-to-Teach. It provides late afternoon and evening upper division coursework which is combined with adjusted classroom duties to provide for academic teacher preparation as well as student teaching. Thus, the student is allowed to maintain district employment while pursuing the elementary credential. Furthermore, in response to the Multicultural Infusion Initiative, the university faculty has been working with their colleagues in the public schools to change the college's curriculum and to influence educational practices in the public schools. This combination of programs would seem to have made some of the intersegmental linkages encouraged by the 2+2+2 project, but perhaps without the emphasis on formal articulation agreements. Certainly additional investigation and evaluation for possible integration with these programs is warranted.

Granting of Credit

Three of the projects gave credit by examination. Of these, one required a teacher's recommendation to be eligible for the exam and a grade of "B" or better. Two projects gave a certificate of completion at the end of the secondary class. One project gave credit by competency, i.e. completion of logs of teacher observations. Another gave credit based on the final exam in the course. One project had no articulated courses but got the participants started in regular college preparatory or college classes early, and one project stated that "the articulated courses are vocational courses and not relevant to the academic requirements for transfer."

Concerning recency requirements, the length of time since the student had completed the course or graduated, one school had a two year time limit and one did not have a formal policy, although three years was usually considered the maximum. The other projects did not state a recency policy.

Projects were asked if they had a residency policy. Two required the student to complete 12 units before being given credit for the articulated course. With one project it depended on the academic area of the course. Another project required only that the student be enrolled, another had no residency requirement.

The grade was recorded on the student transcript by two schools as credit/no credit, two other schools made a notation that the credit was for an articulated course. One school showed the articulated course as credit by exam and another one as elective credit. The Teacher Education projects use the same mechanisms for the granting of credit as the original cohort of projects. Generally, this articulation mechanism is defined in the articulation agreement and

usually provides for a credit by exam process initiated by the student with the credit being given either upon enrollment or after the completion of 12 units in the community college.

Basic Skills

The projects reportedly were addressing the adequacy and improvement of students' basic skills by:

- encouraging college preparation for the secondary student,
- establishing summer institutes which provide classroom and academic preparation,
- utilizing the community college matriculation process, and
- providing peer counselors and tutors in the high school and community college.

The community college provided a locus of basic skills development for those who needed improvement after high school, and the university most often expects the community college transfer student to have acquired requisite basic skills. However, "conditional direct admits" to the university will be provided with extra tutoring by one project.

Sharing of Facilities

At this time, there is no demonstrated movement toward the sharing of facilities because of the nature of the teacher education projects. Four projects reported no sharing of facilities; however, one project stated that high school students were allowed to take community college courses on the weekend; one project shares instructors with other programs; another project

offers specialized college courses on the high school campus. Summer programs for secondary students are offered on both community college and university campuses.

Communications

Because time was of the essence, existing communications networks were especially important to these projects. The first year, four were able to take advantage of functioning articulation councils or advisory boards, and, after giving priority to establishing such intersegmental advisory boards, all projects had functioning boards by the end of the second year. There was the variety of communication activities which have been utilized by the earlier projects: meetings, work sessions, faculty and staff in-services, and project presentations. The project directors agree that one benefit of the articulation process has been enhanced communication within schools, across segments and among projects.

Outreach Activities

Some of the teacher education projects coordinated with existing campus-based programs directed to underrepresented students such as CALSOAP, MESA/MEP, EOP/S. These complementary programs worked cooperatively with the projects in the referral of students and provided expanded services to students. Working with these programs also eliminated duplication of effort. Reportedly, there were "several programs vying for the same underrepresented students to go into teaching careers which is causing confusion for the student." Clearly, this was not the intent of the 2+2+2, but nonetheless it does indicate a possible issue to be resolved as the teacher education projects are implemented.

The December 1989 2+2+2 project meeting was timely in that the projects benefitted from the exchange of outreach ideas and techniques and from the availability of materials already developed. Partly as a result of this sharing, the teacher education projects reported preparing brochures, posters, door cards, book covers, presentation folders, newsletters and videos to use in their continued outreach efforts. Most efforts were focused on high school students (Display 5).

Display 5
Outreach Techniques Used in Each Segment
1991-92

Outreach Techniques Used by Teacher Education Projects (n=9)	High School	Community College	University
Printed materials			
Flyers	4	4	3
Brochures	5	4	2
Newsletters	1	1	1
Posters	3	2	1
Presentations/ personal contacts			
Career Fairs/Days	6	5	3
College Fairs/Days	5	6	3
Classroom presentations to students	6	6	4
Meetings with teachers/instructors	6	5	3
Counselor in-services	5	4	3
Administrators	6	6	4
Articulation councils	6	6	4

Outreach Techniques Used by Teacher Education Projects (n=9)	High School	Community College	University
Administrative boards	4	3	3
Business/industry	2	2	1
Other departments	2	2	3

However, materials were but a tool for outreach. The projects were asked to list their program funded outreach activities as well as the number of students, staff, and parents in attendance (see Display 6). The activities were directed to two specific audiences: The first to faculty, administrators, counselors, staff, committees and councils to describe the 2+2+2; the second to students, parents and the community was geared toward getting students into the program. The most frequently reported activities were presentations to classes, teachers' clubs, and faculty, and participation in career day activities.

Display 6
Teacher Education Projects
2+2+2 Program Funded Activities and Participation

Type of Activities	# of Activities	# of students	# of staff	# of parents
Special assemblies	6	1520	87	3
Parent meetings	9	251	91	451
Classroom presentations	70	2885	73	1
Faculty meeting presentations	10	-	365	-

Effective outreach was vital to the maintenance of the teacher education projects and made considerable progress in these areas. Three projects reported that the use of role models was a key element in the outreach effort to underrepresented individuals, and they utilized faculty, staff, tutors and mentors to provide this. One project has established an Underrepresented Constituency Council to assist them in reaching and being effective with the underrepresented. All of the teacher projects reported coordinating their outreach efforts with other institutional outreach and recruitment programs such as CARE, Student Leadership Programs, the CSU Teacher Diversity Project, Migrant Education, and school district paraprofessional programs.

Ongoing outreach to establish project identity and keep the momentum going over a very lengthy educational span will be critical to the future of the projects. The teacher clubs have made a strong start in assembling a cadre of high school and community college 2+2+2 program participants and will supply an essential resource for recruitment and retention after the end of funding.

Student Support Services Provided

Counseling and counselors were the linchpin of student support services. They provided support to the articulation effort, often acting as liaison from one segment to the next and to the school departments. Designated counselors were appointed in three projects, and the use of counselors at the high school and community college has been documented. The counselors provide guidance and information about careers in teaching and the 2+2+2 program and served

as outreach coordinators as well. The universities have academic advisors and, in some instances, faculty who provide similar assistance to students at that segment.

The projects have identified the need for student support services and have proceeded to provide a variety of them. There was, however, a tendency to rely on existing institutional services. This may be expedient, and even preferable in some instances, for example, matriculation assessment and course placement services, but there remains an unmet need for project-specific services especially in the secondary segment where fiscal constraints limit the provision of student services.

When asked in what ways their program addresses the academic and nonacademic special needs of underrepresented students, most projects reported they used the existing community college and state university services. Financial concerns--scholarships, financial aid, financial need and internships were mentioned as areas of concern to students. Monitoring academic progress, tutoring, mentoring, and counseling were reported as addressing the special needs of underrepresented students. Faculty at the community college were providing one-on-one counseling and guidance to project participants. Activities cited which addressed the culturally diverse nature of the student participants included use of role models, guest speakers, special award ceremonies, family orientation nights and special cultural heritage events. As was mentioned earlier, most of the projects had one or more pre-existing programs especially for underrepresented students. While duplication of effort was not a problem, such special services should be coordinated to ensure they do not overlap and are presented consistently in ways that will be acceptable and accessible to students. The coordination and delivery of special student services is an area of importance to student retention.

Success and Barriers: Extent to Which Project Objectives Were Met

In response to "what specific barriers or successes have you experienced this year," the most often-mentioned success was the improved working relationships and communication within and among the institutions. "Superlative intersegmental cooperation," and "true teamwork" were some of the comments. Despite funding restrictions, the enthusiasm of the teachers involved in the project and strong support at all levels were reported successes. Three projects cited unexpected spin-offs; one saw part of the 2+2+2 used as a model for a program with a school outside of the project; the other found an outreach and communications network fitting in with the development of a new campus. The third unexpected benefit was a project becoming a repository for referrals of bilingual, bicultural employees to other agencies. Additional unanticipated outcomes described by the project directors in the final report were the district provided financial support of selected program components and features, the County Board of Education made the program a priority, other programs became interested in articulation, the number of students and articulation agreements far exceeded expectations, outreach to junior high schools developed a readiness and awareness of the program, and a private college awarded $10,000 for a Tomorrow's Teacher instructional aide.

The shortness of time to complete the project was mentioned as a barrier, but most barriers were funding related, such as funding cutbacks, layoffs, low morale and reduced class offerings. One project reported that budget adjustments at all three segments altered the lines of communication and disrupted the planning pattern established in the first year of the project. Barriers, all of which are of significant consequences, identified were the unusual number of

changes in personnel (two projects), the slow pace of coordinating several educational institutions, the resistance of college staff to giving credit for high school courses.
the need for a third year of funding to reach the level of visibility and achievement needed for institutionalization. Reported barriers relating specifically to students were the need for special consideration for underrepresented students when they transfer to impacted education programs, the perception of students that teaching is a low paying career and lacks prestige may have an impact on participation, and recent publicity about statewide cuts in programs, classes and personnel has caused students to question whether this is what they want to do.

All project directors reported progress in completing 2+2+2 objectives and indicated that objectives had, for the most part, been accomplished. Objectives in the area of curriculum articulation were slower and more difficult than expected. Projects also reported some objectives as ongoing. A few objectives were not achieved because of cuts in funding. Project dissemination was deferred to Fall 1991 by two projects.

Conclusions

The teacher education 2+2+2 projects were funded in response to the demonstrated need for an enlarged supply of bilingual bicultural teachers. The nine funded projects began at different levels of program and articulation experience but succeeded well in achieving their objectives. Considering the timelines for these projects, they have made remarkable progress, in part because of pre-existing communications networks, in part because they were able to benefit from the earlier projects' experience, but also because of their own enthusiastic efforts and hard work. The teacher education programs concentrated on outreach; therefore, outreach

activities began simultaneously with program planning. Cooperation with existing programs for underrepresented students was instrumental in enabling the projects to accomplish many of their outreach and student services objectives and will ensure their continuance of these service after the 2+2+2 funding is over.

Because the primary focus of the teacher education projects was enrolling members of underrepresented groups in the program, articulation of the curriculum did not proceed apace. One of the reasons for this was the scope of the curriculum to be articulated. The majority of teacher career pathways are based on college preparatory programs in the high school and liberal arts programs in the community college. The potential volume of curriculum articulation is greater than an education or child/human development department can practically provide. Such extensive articulation could probably be more efficiently and effectively handled by the subject areas under the aegis of an institutional commitment to articulation. The connection of the 2+2 to the university level would most efficiently be handled by transfer agreements rather than program or curriculum articulation because of the volume of programs and the need for constant review.

One unique issue surfaced with the Early Childhood Education-based projects, and that includes the concerns regarding the appropriateness of awarding articulated course credit for any non-college-level Child Development coursework or experience because of Department of Social Services (DSS) licensing requirements. This issue was to have been addressed at a recent California Community College Early Childhood Educators (CCCECE) regional meeting.

As with the first group of career education projects, it has been demonstrated that the 2+2+2 is more likely to be a 2+3+3 (or more), with an <u>additional</u> year necessary for most

teaching careers. This is really a 2+2+2+1 program that adds up to more than seven. For this strenuous a program, long-term student support services are essential if those aspiring to be teachers are to complete a lengthy and demanding educational pathway. Financial aid, support groups, and counseling should be an integral part of the program. Even so, there is more to becoming a teacher than just completing coursework. Some students will need to be assisted in developing the aptitude and other qualities needed.

Recommendations

1) It is recommended that the State of California authorize funding for a longitudinal study to evaluate the effectiveness the 2+2+2 teacher education project in increasing the supply of underrepresented teachers.

2) It is recommended that funding be provided by the State to the community colleges to coordinate all programs addressing recruitment/outreach to the underrepresented for enrollment in teaching programs and that the 2+2+2 be integrated with them efficiency.

3) The universities should be encouraged to develop policies about how to handle 2+2+2 students applying for impacted programs. Issues such as filled classes and programs and preferential admittance require attention so that students can be informed of policies and procedures in a timely manner.

4) It is recommended that the courses which can be substituted for taking parts of the National Teachers Exam be standardized statewide since this list varies from school to school and a student who changes school may experience a misunderstanding in which courses are accepted.

APPENDIX A

FINAL PROJECT REPORTS *

(edited for brevity)

* Objectives are representative of each project and while they may include those from prior years, for the most part reflect the objectives for the 1990-91 funded year.

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American River College
2+2+2 Articulation: Partnership for Excellence

Program area/discipline: Business and Computer Science
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
American River College (Los Rios Community College District)
California State University Sacramento
Sacramento County Office of Education ROP
Center High School
Elk Grove High School
Folsom High School
Grant Union High School
San Juan High School
Sacramento City Unified School District

OBJECTIVES:

- To strengthen the articulation between ARC and the high schools, ROPs, and adult schools by increasing the number of and courses articulated with the secondary schools already participating as well as adding new schools to the project.
- To in-service all new and continuing instructors in 2+2+2 process and procedures and to provide in-depth instructor workshops to bridge the gap between the high school and college courses.
- To improve the performance of high school/ROP/adult school students on challenge exams after an analysis of the performance on the Spring 1990 exams.
- To develop instructional materials to supplement the secondary curriculum and include an optional series of pre-tests for use in the secondary level.
- To provide information on student support services available at ARC to secondary teachers and students.
- To monitor student progress and recommend services to students utilizing the student tracking system.
- To strengthen the articulation between ARC and CSU, Sacramento, School of Business, and also the Computer Science Department in the School of Engineering, by improving articulation agreements and individual course agreements.
- To in-service counselors at all levels in the articulation process and to make secondary counselors, in particular, more aware of the articulated education path students can take through the 2+2+2 articulation process.
- To develop a strong outreach program by developing brochures, posters, and other appropriate materials and by making presentations directly to students and student support groups to encourage participation in the 2+2+2 articulation program.
- To disseminate information about the project at participating schools, conferences and meetings.

ABSTRACT:

The program encourages students to consider careers in business and/or computer science at both the Associate degree and the Bachelor's degree level.

During 1990-91, the project involved 39 secondary teachers at 23 school sites (19 high schools, two ROP Centers, and two adult schools). Fifty-nine agreements were signed covering seven different classes. Seven members of the business faculty at American River College also participated.

The curriculum articulation has included in-service training and the development of supplementary instructional materials for use in the secondary classes.

Participation of secondary students in the challenge exams for college credit has increased each year. This year 311 students were recommended by secondary instructors to take the exam, and 250 actually tested, for a participation rate of 80 percent. Ninety-two students earned credit for a pass rate of 37%.

During the three years of this project, there has been a substantial increase in the communication with the CSUS School of Business. American River College has traditionally had course articulation in place with CSUS.

Outreach activities during the past three years have included the preparation of four brochures, a poster, classroom/career fair presentations, print media, and presentations about this project at several conferences.

This project does not identify a student as a program participant until the end of the school year when the student agrees to take a challenge exam for an articulated class. Therefore, most of the information provided for 2+2+2 students is provided to all students enrolled in an articulated class. The focus has been on using existing student services for 2+2+2 participants, such as those offered through financial aid, counseling, EOPS, PACE, etc.

The articulation manual developed during this project has been adopted for campus-wide use. Articulation is a campus priority and agreements are being developed in nearly all instructional areas. The American River College Articulation Council oversees the articulation efforts of all instructional areas. Articulation with the business instructors at the secondary level will continue.

American River College
Careers in Education

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
American River College (ARC) (Los Rios Community College District)
San Juan Unified School District
Grant Joint Unified School District
California State University, Sacramento (CSUS)

OBJECTIVES:

- Faculty will complete a comparison of courses, articulate curricula and develop written articulation agreements in the areas of math, science, English, vocational education and other elective areas.
- Coordinated student support services at 2+2+2 levels will be expanded.
- An articulated 2+2+2 career education outreach program will be implemented.
- An articulated staff development program at all 2+2+2 levels will be implemented.
- The number of teacher trainees from Black, Hispanic, and American Indian ethnic groups will be increased by integrating ARC MESA/MEP students into this Careers in Education project.
- Curriculum pathways will be developed and the information disseminated.
- Formal linkages to the CSU Sacramento credential program will be established.
- A student tracking system will be implemented.

ABSTRACT:

There are currently 24 students in the Teachers of Tomorrow scholarship program. Fourteen are continuing from last year, and nine more have been added this year. Scholarship students have signed an agreement to prepare for careers in elementary or secondary schools. They will return to their home districts to teach for at least two years to "forgive" their loans. Then, if they wish to pursue their education, they will be encouraged to complete their Master's Degrees or Ph.D.'s and possibly seek employment in the higher education segments of this project. In addition, there are 177 student participants at 13 high schools. Most express interest in elementary and/or secondary teaching careers.

Articulation meetings and agreements are being worked out and are in various stages of completion. Between the high school and ARC segments, English 58 and English 4 agreements have been completed during the past year, and work is on-going in other targeted areas, including "Careers in Education," Advanced Placement U.S. History, Economics, Anthropology, Painting and Drawing, and Physics. Course-by-course curriculum agreements have been signed with CSUS in 10 different areas applicable to teaching: Liberal Studies, Biology, Business, English, History, Home Economics, Math, Music, P.E., and Drama.

Underrepresented minorities are being identified for scholarships through networks established in the high school clubs, counselors, MESA/MEP programs, Hispanic Chamber of Commerce, and a Black women's conference aimed at high school seniors, etc. Communications with the school systems have been made through the principals of middle

schools, and high schools and presentations to the high school administrators, teachers' group, and a school board. In addition, mailing and making direct contacts with church/community organizationswill be done.

Support services have continued through 1)high school club activities, i.e., college tours, summer leadership camp, guest speakers, and MESA/MEP field trips; and 2) colleges services such as designated counselors at ARC and CSUS, advisors and outreach officers at each campus, scholarships for 24 scholars participating this year, financial assistance through teaching internships and summer employment at CSUS, ARC, and San Juan summer school.

The program has been fully institutionalized in these areas: Articulation Council (intersegmental meetings quarterly), establishment of three high school courses (Careers in Education) and commitments for more, clubs with committed sponsors in all 13 high schools, campus tours of ARC and CSUS, and additional Teachers of Tomorrow scholarships will be awarded for at least the next three years.

Bakersfield College

Curriculum Accounting Providing Involvement Through All Levels

Program area/discipline: Accounting
Funded: 1988-89, 1989-90

Participating Entities:
Bakersfield College (Kern Community College District)
Kern High School District
Kern High School District ROP
California State University, Bakersfield

OBJECTIVES:

- An intersegmental committee is to be formed to meet weekly.
- Meetings are to be held with educators of successfully articulated programs.
- Articulated curriculum and written agreements between CSU Bakersfield, Bakersfield College, and Kern High School District ROP are to be completed.
- A closer relationship and rapport with local high school business/accounting instructors is to be developed.
- Counseling is to be coordinated with the Bakersfield College Re-entry Program and Kern High School District ROP.
- A preliminary testing program is to be implemented.
- A community based advisory committee is to be formed.

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Butte College

2+2+2 Articulated Career Education Programs in Automotive Technology

Program area/discipline: Automotive Technology
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Butte College (Butte Community College District)
Chico Unified School District
Butte County Office of Education ROP
California State University, Chico

OBJECTIVES:

- The faculty from all three educational segments are to design an articulated curriculum for Automotive Technology.
- 2+2+2 promotional materials are to be developed for distribution to students, parents, counselors, other faculty, school districts, and the advisory committee. Materials include a ten-minute video and 2+2+2 handbook disseminated to all local high schools/ROP's.
- Workshops are to be developed and conducted for the participating faculty providing them with hands-on experience as well as the opportunity to learn the details of the other educational levels and to observe the articulation process as a continuum of curriculum.
- Workshops are to be developed and conducted for counselors from all three educational segments informing them of the new program and its requirements.
- The 2+2+2 program is to be formalized and institutionalized by the completion of written articulation agreements among the participating educational segments, including high schools, ROP's, community colleges and university.
- The project staff will disseminate project activities and results to other institutions interested in developing a 2+2+2 articulated career education programs in Automotive Technology.

ABSTRACT:

The 2+2+2 articulated career education program in automotive technology at Butte College has established 30 articulation agreements between local high schools/ROPs and Butte College. In addition, the project has formalized articulation agreements between California State University, Chico and seven community colleges in northeastern California. Only two high schools/ROP were involved in Year One, and the articulation agreements for these two schools were expanded in Year Two and maintained during Year Three.

Two counselor workshops were held each year. The purpose of these workshops was to enhance the support services available to students entering the 2+2+2 program. Further, the workshops provided awareness training regarding the goals of the 2+2+2 program as well as training on proper procedures regarding articulation among all three segments.

Faculty workshops were held during all three years to develop the articulation agreements. This activity was followed up with site visits by Butte College faculty to the school sites. The purpose of the site visits was to examine equipment and facilities as to adequacy for program

credit. Site visits also provided the opportunity to speak to students directly about the 2+2+2 program in automotive technology.

Outreach materials were developed, printed, and distributed in a variety of ways. The project distributed information using direct mailings to sophomores, career fair booths, and mall displays. The Butte College Career Van also contains copies of project materials for distribution. All outreach activities were maintained during the three years.

In addition to the proposed faculty workshops, "bonus" workshops were included in June 1989, June 1990, and June 1991. The workshops included a session on 2+2+2 articulation as well as discipline-specific training in automotive technology. Participants were able to earn college credit for these sessions.

Finally, this project has made much headway toward institutionalization. In Year Three, the process was completed. Annual review of articulation agreements will become standardized as it was practiced in Year Three. The two high schools/ROP from Year One expanded their articulation agreements with Butte College based on such an annual review. The project also has strong support from local business and industry as evidenced by participation on the Automotive Advisory Committee and donations from industry. A recent donation from industry totaled $165,000 during the 1990-91 academic year.

Cerritos College
2+2+2 Articulated Career Education Model Program

Program area/discipline: Automotive Technology, Drafting and Design
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Cerritos College (Cerritos Community College District)
ABC Unified School District
Downey Unified School District
Norwalk-La Mirada Unified School District
Southeast Regional Occupational Program
California State University, Los Angeles
California State University, Long Beach

OBJECTIVES:

- Continue the process of ongoing support for articulation of programs and the communication of objectives and tasks through interaction with administrative personnel at the unified school districts and universities.
- Refine the institutionalization of the 2+2+2 articulation model through continued interaction with unified school district personnel.
- Establish an outreach program that informs high school automotive and drafting students of the 2+2+2 program and facilitate their enrollment in the next level.
- Refine the institutionalization of the 2+2+2 articulation model through continued interaction with personnel of participating California State Universities.
- Establish an outreach program that informs Cerritos College students enrolled in articulated classes of the 2+2+2 program with California State Universities.
- Continue the process of refinement and alignment of articulated curriculum.
- Institute a plan that will track and monitor student participation.
- Convene meetings of the Articulation Council and subcommittees at least twice during the project year for planning and review of activities and procedures.
- Improve advertising and communication to high school students and their parents as well as to community college staff and students and other deliverers of vocational education regarding 2+2+2 opportunities.
- Increase the number of enrollments from the secondary schools in the Cerritos College Automotive and Drafting Classes by 30 2+2 Students.
- Identify at the middle +2 level at least 50 additional Automotive and Drafting/Engineering student participants in the 2+2+2 project.
- Enhance Pupil Personnel Services for students already identified as participants in the 2+2+2 program as measured by records kept by the College Articulation Counselor.
- Review and revise the 2+2+2 Teacher/Counselor Manual.
- Expand the involvement of business and industry in the development of 2+2+2 programs.

ABSTRACT:

The project focused on increasing the number of students enrolling in the automotive and drafting programs at Cerritos College. However, the momentum generated by 2+2+2 expanded

the articulation effort into other areas of technology, business education, and health occupations. Also, the 2+2+2 effort generated an acceptance, for the first time at Cerritos College, of Advanced Placement test scores in science, math, and social sciences.

Cerritos College has 13 articulation agreements with its feeder high schools and ROPs in automotive and 20 articulation agreements with its feeder high schools and ROPs in architecture and drafting. There are 10 agreements in auto-collision repair, electronics, plastics, and welding.

Dr. Steven Helfgot, the College's High School Relations Counselor, has accepted the challenge of working with his counterparts in the high schools to make the 2+2+2 an integral part of the recruitment and enrollment process between the secondary schools and Cerritos College. Outreach efforts includes presentations and meetings with counselors and vocational teachers, and the development of an updated 2+2+2 brochure, display ads in school newspapers, articles in parent/teacher district-wide newsletters, vividly colored posters in high school classrooms, and two pages of articulated classes listed as such in the Cerritos Class Schedule.

Students enrolled through the articulated process are given an opportunity to attend an orientation program. This program provides them with early registration and the opportunity to apply for financial aid and get information on accessing tutoring, peer counseling, and other support services of the College. The College has five counselors designated as 2+2+2 intake counselors in the areas of business, technology, and health.

The new application for admission to Cerritos College will contain a question regarding 2+2+2 participation. The class schedule now has an ongoing section of articulated classes. Brochures and other communications are posted and distributed to the students. The 2+2+2 program is on its way and has established the foundation for the new Tech Prep initiative of the state and federal government.

California State University, Chico
2+2+2 Articulation in Agriculture

Program area/discipline: Agriculture
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
University Foundation, CSU Chico (Northern California Higher Education Council)
Butte College
Butte County ROP
Yuba College
Santa Rosa Junior College
Sierra College
Shasta College
Oroville Union High School District
Marysville U.S. District
Tri-County ROP

OBJECTIVES:

- Implement the outreach plan for promoting agricultural careers, education, and articulation among all segments of instruction.
- Each college will provide a support system for students, which includes guidance and counseling.
- Monitor and evaluate the flow of students in the Ag 2+2+2 program from high school to college to university.
- Standardize the option for high school student advanced placement through which they obtain up to three units of transferable community college credit for core or elective courses in the Ag 2+2+2 program.
- Execute new articulation agreements, review, and revise the existing articulation agreements between each participating community college and its feeder high schools.
- Disseminate project results to other institutions interested in replicating the project.
- Conduct an articulation in agriculture conference.

ABSTRACT:

The quality of agricultural programs is being significantly improved at participating colleges and CSU Chico by the creation and implementation of the lower division common core of courses and the articulation of them with feeder high schools. In the third funding period the emphasis was on increasing enrollments, institutionalization of the program and dissemination.

The new lower division common core of agricultural courses has now been articulated between CSU Chico and 15 community colleges as evidenced by signed written agreements. Articulation agreements regarding specific agriculture courses between participating colleges and their feeder high schools have been signed at 14 schools and are drafted pending signature at three more.

Project Co-director Doug Flesher from Butte College has represented the Agriculture 2+2+2 Program at over 20 special events including CATA regional and state meetings. He and campus coordinators from Shasta and Sierra Colleges have visited more than 26 high

schools. At Santa Rosa Junior College outreach has been integrated into the College's overall 2+2 efforts. The Shasta College outreach effort uses college students to directly contact high school students. The articulation officer at CSU Chico has met with college and high school counselors and produced a special agriculture 2+2+2 manual for their use.

Support services have been uneven and varied from college to college. Shasta College has engaged college students to follow up with high school students. Butte College relies more on continuing rounds of high school class visitations by their project director to maintain student contact. SRJC uses a career counselor to maintain liaison with their high schools and work with counselors, instructors, and students.

The new lower division common core of agriculture courses has been institutionalized at CSU Chico and 14 community colleges. The California Agricultural Teachers Association (CATA) is a good vehicle for further institutionalization by making its members--high school, college, and university agricultural instructors--aware of the program and its progress through its regular regional and statewide meetings. At Shasta College the program is just beginning to become an integral part of the counseling and student services area. At SRJC such is already the case. The Butte College tracking system is becoming an integral part of their well established matriculation system. Butte has established an Academic Partnership Council with representation from all its feeder schools and CSU Chico. Shasta has formed an implementation committee with high school principals, ROP directors and community college program directors.

Compton College
2+2+2 Industrial Technology Articulation Project

Program area/discipline: Automotive Technology
Funded: 1988-89, 1989-90

Participating Entities:
Compton College (Compton Community College District)
Paramount Unified School District ROP
California State University, Los Angeles

OBJECTIVES:

- A tracking instrument is to be developed and applied which will monitor the progress of 2+2+2 participants.
- Instruction with counseling and tutorial support will be provided to at least 120 participants from the Paramount USD (high school ROP), Compton Community College and California State University at Los Angeles with the continued enrollment through term of 100% of participants and the continued enrollment through the entire project year of at least 80% of same.
- Comprehensive outreach activities are to be developed to promote the 2+2+2 program, increase community and student awareness of the program, and its suitability for career education, and to ensure intersegmental cooperation.
- Print and media materials are to be developed that can be utilized to document the program and its accomplishments, disseminate information about the project, and assist other institutions seeking to replicate.

ABSTRACT:

Articulation agreements linking the Paramount Unified School District (high school and ROP), Compton Community College, and California State University at Los Angeles are in effect, and 2+2+2 courses were taught at the first two segments during the fiscal year.

In the Paramount USD, 108 secondary students, (107 male and one female) took courses. 100% of these students remained enrolled through the term, and 83% of them remained enrolled through the school year, as of the date of this report.

At the community college level, 26 students remained enrolled through the term, and 27% remained enrolled through the school year, as of the date of this report. It should be pointed out that 19 of these students did not enroll in the program until the spring semester.

Since 1989-90 was the first year of implementation of the 2+2+2 program in Automotive Technology, there were no students transferring from the first two segments. It is anticipated that at least 10 students will transfer from the community college during the third project year, 1990-91.

A 2+2+2 Advisory Committee, formed during the first project year, continued to meet to review the program's progress and to suggest revisions as needed.

Clear course pathways for all 2+2+2 participants have been established and delineated in a flyer highlighting the program. Outreach activities included presentations before occupational education students, before counselors at all segments, and during both career and

college days at the secondary level. The program has been highlighted in student newspapers and by presentations to both civic organizations and the Compton College's Academic Senate.

Support services have included comprehensive counseling with a counselor designated for the program at each institution involved. In addition, tutoring has been provided to all participants, as well as career assessment and financial aid advisement assistance. A descriptive brochure was printed and distributed (5,000 copies). Other dissemination products, a videotape and a folio with information on the program and participating institutions, were not finalized.

College of the Desert
Teacher Education and Career Help (TEACH)

Program area/discipline: Early Childhood Education
Funded: 1988-89, .1989-90, 1990-91

Participating Entities:
College of the Desert (Coachella Valley Community College District)
Coachella Valley Unified School District
Palm Springs Unified School District
Desert Sands Unified School District
California State University, San Bernardino
California State University, San Bernardino in Palm Desert

OBJECTIVES:

- A formal transition program is to be developed, implemented and refined so that educational aides and assistants with two-year terminal degrees can begin to pursue a four-year teacher education program at CSU, San Bernardino with as many transferable units as possible.
- Aspects of the College of the Desert Early Childhood Education program are to be redesigned so that more of the courses are transferable.
- Other two-year programs are to be identified (e.g. bilingual education, day care providers, etc.) for which articulation programs could be developed linking CSU San Bernardino/Palm Desert, College of the Desert and local school districts.
- A program of early identification is to be developed and implemented which encourages high school and middle school students to enter an articulated path leading to a career in education.
- Create procedures to pay the salary of an Articulation Manager as key institutionalization factor.
- Finalize procedures to fully institutionalize TEACH components.
- Generate and duplicate project protocol materials for use by campuses considering adoption of TEACH approaches.

ABSTRACT:

Project TEACH (Teacher Education and Career Help), a partnership effort of the Coachella Valley Community College District, College of the Desert, (COD), has joined forces with three local K-12 school districts and California State University/San Bernardino in Palm Desert (CSUSB), to articulate Early Childhood Education courses, ROP courses and other Liberal Studies courses designed to aid students in reaching their ultimate goals in entering teaching professions. These articulation efforts are directed at target audiences in the community - primarily to bilingual teaching aides with terminal two-year degrees, high school and community college students and college drop-outs. TEACH works towards encouraging students towards baccalaureate degrees and fifth year university training and teaching credentialing. College of the Desert, through this program, has developed an articulation partnership with local

K-12 schools--the Coachella Valley, Desert Sands and Palm Springs Unified School Districts with CSUSB as a segmental partner.

The primary focus has been development of 2+2+2 Early Childhood Education and Liberal Studies articulation between segments to assist students moving from high school courses to the second (+2) segment at COD, to the final two years at CSUSB to prepare for teaching careers.

To address these goals, TEACH networks with diverse academic and other groups. Facilitating these goals is the TEACH Task Force, composed of 2+2+2 segmental representatives, academic administrators, teachers and students. This group handles articulation planning and development while serving as a "grass-roots" component to academic decision makers. While including program participants and faculty, the Task Force is representative of organizations aimed at minorities, literacy groups and others.

During Project TEACH's second year, a general articulation agreement was signed between COD and CSUSB. Articulation agreements between COD and the three K-12 school districts were also signed for math courses in November, 1989. Project TEACH has achieved articulation between ROP classes and College of the Desert, and between COD and CSUSB with respect to Early Childhood Education courses and some Liberal Arts courses. Work is underway on articulation in other Human Development courses focusing on "education".

Formal ongoing articulation programming is being institutionalized with continuing Task Force and Articulation Council meetings.

DeAnza College
Minority Teacher Education Project

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
DeAnza College (Foothill-DeAnza Community College District)
Fremont Union High School District
North County Regional Occupational Program
Pacific Oaks College
California State University, San Jose
University of California, Santa Cruz

OBJECTIVES:

- To develop a comprehensive academic model for the lower division education of prospective teachers.
- To plan and implement program recruitment strategies at the high school and lower division college level and within the broader community with an emphasis on the underrepresented.
- To improve the retention of students, particularly the underrepresented, identifying teaching as a career goal.
- To identify and increase the number of underrepresented students successfully completing the lower division requirement for the Child Development major or other majors accepted for admission to a credential program.
- To increase the number of underrepresented students successfully transferring to a four-year institution for the completion of requirements for teacher certification.
- To establish and maintain an evaluation component.
- To design and implement objectives so the program becomes institutionalized and self-sustaining.
- To disseminate program descriptions and data for replication statewide.

ABSTRACT:

This year the project targeted students interested in acquiring a Multiple Subject Credential for teaching at the elementary education level. Students are also referred to an existing campus project focused on secondary teaching in urban districts.

Two courses have been articulated at the high school level. Program articulation rather than course articulation has been emphasized at the community college level. Each four-year university offers guaranteed admissions to all of our qualifying transfer students. Students at San Jose State University receive priority admission to their impacted fifth year.

The Intersegmental Council and Community Outreach Advisory Committee include both academic and community settings in their comprehensive outreach plan. The inclusion of community-based agencies as a strategy for identifying future teachers from diverse backgrounds has proven effective in reaching the underrepresented population we are targeting.

All students affiliated with the program participate in program, curricular, and club activities. In addition, those students needing additional support for retention due to ethnic,

cultural, or socio-economic diversity receive individual counseling and referral to special services as needed.

All aspects of the program have been institutionalized and will continue in some form. The program coordinator position will not be maintained and this will impact the level of outreach and service.

East San Gabriel Valley ROP
The Connecting Link

Program area/discipline: Fashion Merchandising/Marketing Home Economics
Funded: 1989-90, 1990-91

Participating Entities:
East San Gabriel Valley ROP
Los Angeles Trade and Technical College
California State University, Los Angeles

OBJECTIVES:

- The formal written agreement will have been signed by all concerned parties implementing the fully articulated 2+2+2 program.
- A "Career/Education Handbook for Success in Fashion Merchandising" will be designed which will provide career awareness and career guidance.
- Utilize a local model for extending statewide articulation of Home Economics career programs to the secondary high school and ROP/C level.
- The project director will meet with the principals of the 2+2+2 program in Fashion Merchandising between East San Gabriel Valley ROP, Los Angeles Trade and Technical College (LATTC) and California State University, Los Angeles (CSULA) to develop materials for outreach, tracking and follow-up that can serve as models for other program areas in Home Economics.
- A day-long workshop will be planned to present the 2+2+2 Fashion Merchandising Model to other Home Economics Career Program principals.
- All articulation efforts incorporated in this proposal will be coordinated with the Home Economics Articulation Liaison Committee sponsored by CAHEA.
- Curriculum for all career areas at all levels will be examined to ensure that students are provided with adequate preparation for entry into the job market or for articulation to the next educational level.
- Continue to improve curriculum in Fashion Merchandising programs for the three educational levels represented in the project. Curriculum revisions at each level will proceed through appropriate curriculum committees, academic senates and other segmental reviews.
- Develop recruitment and outreach strategies to publicize and promote the 2+2+2 program and to secure student participation through the process.
- A promotional video will be produced to highlight the advantages of participation in the articulated program. The video will specifically recruit high school students and community college students to complete a Bachelor's Degree in Fashion Merchandising.
- Brochures will be distributed to other agencies and project including adult education, Workability, JTPA, GAIN and EDD.
- Initiate tracking and follow-up of students identified as 2+2+2 program participants.
- Evaluate project outcomes in terms of the objectives stated.
- Disseminate model 2+2+2 program developed for this project to other educators both nationally and statewide.

ABSTRACT:

According to a needs assessment survey of fashion merchandising management, there is a need for individuals trained in the specifics of the fashion industry, and in business and management in order to qualify for advancement into management.

Students completing the two-year Fashion Merchandising Program at the East San Gabriel Valley Regional Occupational Program will have completed instruction and obtained practical job experience in fashion merchandising, product information, selling, and display and fashion/cosmetic sales promotion. Having done so, they may transfer eight units of college credit to the LATTC Fashion Center.

The LATTC articulated program is a 64-unit fashion merchandising program that can be completed in two years. Fashion Merchandising options include one year of fashion related courses and one year of a specialty which offers specific training in merchandising, personnel, management, and promotion/journalism. Students may elect to be certified by completing additional units.

At CSULA, students complete any necessary general education requirements not already finished. The focus of the program here includes acquisition of competencies in management, textile sciences, imports/exports and advanced marketing.

Work experience, internships and job placements are provided at all levels utilizing additional funding sources such as the Job Training and Partnership Act (JTPA) and Vocational Education Act (VEA).

A promotional video was produced highlighting the advantages of participation in articulation. CSULA student ambassadors made presentations about the program and its desirable outcomes at ESGVROP, their feeder high schools, and LATTC. Field trips were made to participating colleges. The project staff presented workshops to other educational agencies.

The project includes a high-profile guidance component designed to provide those support services necessary to help assure student success throughout the educational process.

ESGVROP faculty gave a 2+2+2 counselor in-service to provide specific information for 2+2+2 student assistance. Staff prepared a 2+2+2 display board for career centers and counselors at Open House. The advisory committee and faculty reviewed all student surveys and applications. Students and advisors utilized established articulation procedures and the "program grid."

All necessary application and intent forms have been developed and will continue to be provided at all educational agencies. The guidance booklet, known as the Portfolio of Achievement, has been developed and distributed to all agencies that target potential students. This Portfolio will serve as the student's record of accomplishment and as a planning guide through the educational labyrinth. This complete portfolio will chart the student's progress from entry into the program through completion of a baccalaureate degree and will be reviewed, revised and updated on a yearly basis by faculty at all participating 2+2+2 institutions. Project principals will serve as appointed members of each others' regular departmental program advisory committees to further institutionalize the articulation begun in this project and to stay current on segmental curriculum revisions.

Fullerton College

Management of Manufacturing: A 2+2+2 Articulated Approach

Program area/discipline: Management of Manufacturing, Manufacturing Technology
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Fullerton College (North Orange County Community College District)
California State University Los Angeles
North Orange County ROP
Fullerton Joint Unified High School District

OBJECTIVES:

- A comprehensive handbook will be distributed to all participating faculty and staff.
- Institutionalization efforts will include: linking the ASSIST articulation program; inserting the program description in the college catalog section; placing ads in the ROP class schedule; in-servicing of program information to appropriate faculty/counselors; building in tracking mechanism on Admission and Records application; and creating an Articulation Council/2+2+2 Committee.
- A marketing plan for recruiting students will be utilized with an emphasis on the active involvement of faculty in the student recruitment effort. A model student tracking system will be developed which utilizes the Statewide Student Follow-Up System (SSFS) to contain the following elements: an evaluation of the system program at the conclusion of Fall, 1990, to include modification and to include 2+2+2 program evaluators; the preliminary User's Guide will be expanded into a comprehensive procedures manual; and an expansion of the current program to include marketing, business/industry, program evaluation and dissemination capabilities.
- On-going evaluation efforts will include continued Articulation Council meetings.
- Support services will include an array of services at Fullerton Joint Union High School District/ROP, Fullerton College and California State University, Los Angeles.

ABSTRACT:

The Management of Manufacturing curriculum addresses the current need in the manufacturing industry for skilled employees. The focus of this 2+2+2 program is to attract students into contemporary manufacturing positions, provide support services and transitional opportunities. To date, over 70 students have demonstrated interest in the Management of Manufacturing program.

Currently students are able to move from high school/ROP to Fullerton College and can receive a Certificate or Associate of Arts degree in Management of Manufacturing. Students wishing to earn a Bachelors Degree from Cal State Los Angeles in Industrial Technology can also move from high school ROP to Fullerton College to Cal State Los Angeles. None of these pathways were established prior to receiving this 2+2+2 grant.

Focusing on faculty support, each individual instructor of an articulated class has had an opportunity to meet with the Outreach Coordinator to review program requirements and processes. A network of supportive faculty, counselors and administrators support, disseminate

and understand the program information and its process and have been involved in the active recruitment of students.

In addition to regular Fullerton College support services, students received encouragement and information from faculty and counselors at all institutional levels. A specialized technology and engineering counselor at Fullerton College has been assigned to work individually with all Management of Manufacturing students.

In the absence of continued funding of an Outreach Coordinator, instructors will now incorporate information about 2+2+2 Management of Manufacturing program into their classroom orientation process.

Golden West College
2+2+2 Articulation and Preparation for Nursing Education

Program area/discipline: Nursing
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Golden West College (Coast Community College District)
California State University, Fullerton
Huntington Beach Union High School District
Coastline ROP

OBJECTIVES:

- Increase the numbers of 2+2+2 students enrolling in and successfully completing each level of the 2+2+2 in Nursing Education.
- Implement career education for Nursing into instruction and counseling in the high school.
- Update and strengthen articulation agreements in 2+2+2 Nursing Education subjects, including English.
- Increase rate of graduation and licensure for Associate Degree Nurses.
- Develop a Phase II model for 2+2+2 in Nursing Education.
- Increase the number and success rate of 2+2+2 participants from 1989-90 to 1990-91.
- Air two 30-second spots on local cable, distribute brochures and mail to prospective participants and their parents.
- Provide test workshop for students preparing for NCLEX.
- Improve and expand tracking with computer support and phone survey.
- Provide in-service for all instructional and support services lead personnel regarding the project opportunities.
- Expand outreach to potential re-entry adult populations to include adult center and continuation school students and nurse recruiters in community hospitals.
- Conduct workshops for project participants to implement objectives and review progress and include development and implementation of strategies for intersegmental institutionalization, and update of articulation.
- Develop the model for the project and disseminate with samples of project resources to all CCC Nursing Programs, project participants and local institutions. Mail brochures and model to the California School Board Association. Participate in the California School Board Association annual conference.

ABSTRACT:

The 2+2+2 Nursing Education Grant allowed experts to come together to produce a unique program which articulated the Coastline Regional Occupational Program Nursing Assistance with the Golden West College Associate Degree in Nursing with the California State University, Fullerton for a Bachelor of Science in Nursing. The focus in 1988-89 was planning; the focus in 1989-90 was implementation; and the focus for 1990-91 was institutionalization.

At the present time, there are articulation agreements in chemistry, math, and nursing.

Several different methods were used to acquaint educators, counselors, students, and parents regarding the 2+2+2 program. We used brochures to contact all high school students

in the Huntington Beach Union High School District and all members of the Long Beach-Orange County Consortium for Nursing. Along with this, a 13-minute video was shown to promote interest. The videos as well as brochures were sent to all individuals involved in the grant: counselors, faculty, guidance technicians at each of the participating schools. We developed models for phase I, II, III. The models were printed and distributed to all Nursing Schools in California, grant participants, and interested individuals. An intersegmental seminar was provided for each of the last two years at which administrators, faculty, clinicians, nurse recruiters, and students heard about the 2+2+2 program. To further outreach, we provided regular meetings to keep all grant participants informed. The representatives from GWC took nursing students to talk to many ROP classes, as well as to other high school classes.

For the students from ROP, we offered priority admission and credit for the nursing assistant program. Weekly orientation presentations were used to explain the process of applying for and being accepted into GWC's Nursing Program. Grant participants from ROP, GWC, and CSUF met together to ease transfer and articulation for students. These strategies raised and fostered the educational level of involved students.

For the Golden West College student, we have worked on retention. We provided: a workshop on test writing so that all test questions would be in the same format as the NCLEX, software for student practice for NCLEX, intersegmental conferences articulation from GWC to CSUF, individual attention from faculty at CSUF, articulation in algebra, chemistry and mathematics, and a program to raise the sights of the students for higher educational levels.

For students at CSUF, the benefits from the articulation agreement between GWC and CSUF include eliminating repetition in classwork, meetings for teachers from the different levels to talk together to facilitate changes brought about by each program, and a means to keep students abreast of change in requirements.

Preparation for institutionalization has been an intrinsic part of planning for this program. With that goal in mind we involved all segments, all disciplines and departments, and all staffing units. In addition, we used the existing organizational structure to continue the project and developed strategies to evaluate effectiveness. Furthermore, we developed a computer program for tracking all participants and developed an intersegmental council to determine timelines for coordinating ongoing goals and activities. To attract students to the project, we disseminated all resource materials to students, parents, faculty, administrators, and counselors delineating the pathway for the student, integrated planning guides and catalogs to make information readily available to students, and developed an implementable model. This program is institutionalized.

Imperial Valley College
2+2+2 Program

Program area/discipline: Business Administration, Administration of Criminal Justice
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Imperial Valley College (Imperial Valley Community College District)
San Diego State University
Brawley Union High School District
Calexico Unified High School District
Imperial Valley ROP

OBJECTIVES:

- Develop and implement a program of study in Business and Administration of Justice with Holtville and Imperial High Schools.
- Develop and maintain currency of outreach brochures for Brawley Union, Calexico, Calipatria, and Central Union High Schools.
- Articulate equivalent courses in English, math, and business identified during 1988-89 as pertinent to the Business and Administration of Justice areas.
- Develop policy and procedures for granting college credit for advanced placement and high school work.
- Develop and coordinate an outreach plan for Holtville and Imperial High Schools and ROC/P.
- Enhance and implement the outreach program which was developed and implemented at Brawley Union, Calexico, Calipatria, and Central Union High Schools during the 1988-89 school year.
- Provide counseling and guidance services to 2+2+2 project participants.
- Provide career information relevant to Business and Law Enforcement to students by utilizing community resources.
- Develop a work experience component in the areas of Business and Law Enforcement to enhance job/career skills of participants.
- Increase the number of program participants to 200.
- Work with designated advisory committees to solicit recommendations for enhancing the 2+2+2 project operations.

ABSTRACT:

The focus of the Imperial Valley College 2+2+2 Project during the three funded years was in the areas of Business and Law Enforcement.

Curriculum articulation for the Imperial Valley College 2+2+2 Project was planned in three phases. Phase One, during the initial funding period, was the development of curriculum pathways through which students could progress from one segment to the next in the two career areas. Phase Two, initiated during the second year of funding, involved negotiations between the local high schools and Imperial Valley College to determine equivalent courses in Business, English, and Math. Phase Three which involved the granting of college credit for high school courses was initiated during the second funding year.

Phase One was completed and the resulting curriculum pathway brochures serve as the cornerstone of the project outreach effort. Phases Two and Three have required more time and effort than was originally anticipated. Due to the number of individuals involved in articulation for each school district, compounded by the ongoing revision of course outlines to conform to state frameworks, negotiations for course equivalents will continue into the 1991-92 academic year. The granting of college credit for high school coursework has for some time been against district policy at Imperial Valley College. The college district is in the midst of reviewing this policy and hopefully will revise it for the 1992-93 academic year.

The outreach model developed during the initial year of funding and enhanced during the second remains in place. It is viewed so highly by our administrators that most of its features will be institutionalized for the 1991-92 academic year. The model consists of high school counselors serving as liaisons for the project and faculty consultants performing outreach presentations at each of the school sites. The cornerstones for the outreach effort once again are the curriculum pathway brochures developed the initial year of funding.

Supportive services have continued to be developed and enhanced exclusively for 2+2+2 project participants. Career Fairs in Business and Law Enforcement were instituted during the second year of funding and will be institutionalized for the upcoming 1991-92 academic year. The work experience component formally instituted during the third funded year will also be institutionalized for the 1991-92 academic year. Project counselors were incorporated during the third funding year and provided academic, and career and personal counseling. A final feature incorporated during the third funded year was a counseling center informational newsletter mailed to project participants enrolled at Imperial Valley College.

Long Beach College
2+2+2 Articulation Project in Manufacturing Technology

Program area/discipline: Manufacturing Technology
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Long Beach College (Long Beach Community College District)
Long Beach Unified School District
California State University, Los Angeles
California State University, Dominguez Hills

OBJECTIVES:

- Complete formal 2+2+2 articulation agreement with CSU Dominguez Hills and formalize last agreement between LBUSD and LBCC.
- Continue on-going involvement of faculties from all segments and Articulation Council.
- Plan and implement outreach to high school students (freshmen through senior level); continue field trips and Parents' Nights.
- Print and disseminate 2+2+2 articulation publicity.
- Disseminate project results to other education institutions and develop a handbook which documents how the 2+2+2 program works, including program processes, procedures, and operations.
- Continue to track all students participating in the articulation program.

ABSTRACT:

The focus of this 2+2+2 Articulation Program in Manufacturing Technology was to create a smooth transition among the three educational levels for high school students bound for college. Administrators, faculty, and counselors were all involved in the formation of this articulation effort.

Faculty of the various component curriculum areas (machine shop/metals technology, industrial drafting, blueprint reading, and trade and technical occupations) met to formulate competencies and develop articulation agreements. All areas were successfully articulated, - especially in our third and final year of funding when a block articulation agreement was accepted. This included new areas such as mathematics and should prove to be an even more valuable articulation agreement for the students in the future.

An outreach component was added during the second and third year of funding when an outreach counselor was hired with grant monies to go to the high schools to introduce the concept of articulation, explain the articulation process, describe college and career opportunities, and explain procedures of enrollment and awarding college credit for work performed in the high schools. It was highly successful.

The following services were made available to all 2+2+2 articulated students. Tutorial assistance, career counseling, job placement information, assessment and placement, development of career plans, assistance with registration, matriculation, and course selection. In addition, the Southern California Aerospace Council arranged for five local aerospace companies to hire 2+2+2 program students at any point in his/her educational ladder.

Long Beach City College is fully committed to 2+2+2 articulation. The high school coordinator's position is a 50% assignment and also is supported by a 60% clerical position. Representatives of the four-year institutions are invited to participate in Articulation Council meetings. The continuing success of the Articulation Council itself is perhaps the strongest evidence of institutionalization.

California State University, Long Beach
An Articulated Career Education Program in Home Economics

Program area/discipline: Home Economics
Funded: 1989-90, 1990-91

Participating Entities:
California State University, Long Beach
Rowland Unified School District
La Puente Valley Regional Occupational Program
Mt. San Antonio Community College District

OBJECTIVES:

- Continue the non-hierarchical partnership and functional advisory structure developed in first phase of the project.
- Expand faculty involvement at each level of articulation.
- Distribute written materials that illustrate curriculum pathways.
- Update existing agreements and investigate status of other courses that may be articulated in academic areas.
- Target a percentage of course enrollments who will participate in the 2+2+2 articulation program.
- Implement a well-defined outreach plan to attract students to the benefits inherent in the program.
- Provide a support system for students who participate in the program.
- Track participants in the 2+2+2 program beginning in the fall of 1990.
- Disseminate project results both formally and informally.
- A plan for institutionalizing the program will be an integral part of each activity of the proposal.

ABSTRACT:

Existing articulation agreements were reviewed and enhanced by all project participants. The 2+2+2 program was expanded to include Nogales High School. Additional courses were added to the mix. A well-defined outreach component was implemented to attract students to the benefits inherent in the program and provide special support services.

The partnership composed of representatives of each component: 1) reviewed, enhanced, and negotiated agreements, 2) directed outreach activities, 3) evaluated the program, and 4) planned for institutionalization of the model after the end of the funding period. A Task Force Advisory Committee consisting of representatives of business and industry, students, parents, and teachers gave advice and assistance throughout the funded year.

The outreach component carried the project into the community and encouraged students to become involved. Activities designed to give students special support and recognition included clubs, field trips, guest speakers, awards, and T-shirts. Parents and the community participated in an evening of inspiration, recognition, and socializing to become acquainted with 2+2+2. Promotional brochures were developed to inform students and parents about articulation and career pathways. A short video which explains child care as a career option was produced and others are planned. High school and community college students visited the

campus of the university, thereby opening possibilities for further study. University students mentored high school and community college students at their sites.

A Handbook for an Articulated Career Education Program in Home Economics was revised for continuing use by counselors, advisors, faculty, and others concerned with assisting students who participate in the program.

There were several unexpected benefits of the articulation process, but the greatest was increased communication and understanding among segments. New possibilities for students at all levels were revealed.

The primary barriers to complete institutionalization of 2+2+2 are time and money. However, several components are now in place. A very special level of commitment on the part of segmental partners will be needed to continue the program. Administrators, counselors, and teachers at all segmental levels provided enthusiastic support.

California State University, Los Angeles
Teacher Education with an Emphasis on Underrepresented Students

Program area/discipline: Technology Education
Funded: 1989-90, 1990-91

Participating Entities:
California State University - LA Auxiliary Services, Inc.
Paramount Unified School District
Norwalk-La Mirada Unified School District
Southeast Regional Occupational Program
Cerritos Community College District
Compton Community College District
California State University, Los Angeles

OBJECTIVES:

- Organize and then maintain an Intersegmental Advisory Committee to advise the articulation efforts.
- Complete the articulation agreement between John Glenn High School, Cerritos College and CSULA and also between Paramount High School, Compton College, and CSULA.
- Organize an Underrepresented Constituency Council to develop specific recruitment and retention efforts for minority students.
- Develop recruitment brochure for each high school and produce a videotape for recruitment.
- Organize a workshop for parents and send follow-up letters and materials.
- Develop and institutionalize a student tracking mechanism at each high school.
- Develop student transition and support services.
- Organize a one-day summer teacher camp for participants.
- Establish an incentive mechanism for three CSU Technology Education programs for 2+2+2 articulation.
- Organize a project dissemination workshop.

ABSTRACT:

This 2+2+2 articulation program is an effort being coordinated in two tracks, the first among John Glenn H.S./Cerritos College/CSULA and the second between Paramount H.S./Compton College/CSULA for technology teacher education with emphasis on underrepresented students. The end result of this program will provide participating students with a B.A. degree in Technology Education.

The project has three major components: intersegmental articulation, recruiting/retention, and project dissemination.

For intersegmental articulation, two Intersegmental Advisory Committees were organized to advise the articulation efforts of these two sets of schools. Articulation agreements with these schools were completed. A non-hierarchical working relationship with the teachers and counselors in each participating high school and community college has been established as the foundation for future cooperation.

For recruiting/retention, a Underrepresented Constituency Council was formed to advise techniques on recruiting and retaining minority students in the 2+2+2 program. Brochures for each high school were developed and used for recruiting. A recruiting videotape was also produced.

Outreach activities have concentrated on high school classroom student recruiting by representatives from community colleges and CSULA. Counselors and teachers have selected promising students into the 2+2+2 program. The project also participated in regular career and college days activities. Program participants were brought to CSULA campus to tour the Department of Technology and other facilities on campus.

Parent nights were organized to inform the parents of program participants about the 2+2+2 program, and parents were encouraged to provide support for their children's education.

Instructional aides positions were funded by the project at each high school to provide some 2+2+2 participants with early experience in teaching. Peer tutor positions were funded by the project at each high school to provide tutoring services to those 2+2+2 participants who experienced difficulty in their studies, especially in academic subjects.

A summer technology teacher workshop was organized to provide 2+2+2 participants with specific personal development tool, and scholarship opportunities.

A project dissemination workshop was organized and three California State University campuses having Technology Education programs were invited along with their community college and high school representatives. The experiences and problems concerning 2+2+2 articulation during this project and a number of other 2+2+2 projects were presented and discussed.

Only recruiting and tracking, which will become part of the counselor's regular workload, will be institutionalized at the high schools and community colleges. It is difficult to estimate the amount of time which will be devoted to 2+2+2.

Rancho Santiago College
Tomorrow's Teachers

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
Rancho Santiago CCD - Rancho Santiago College
Orange Unified School District
California State University, Fullerton Foundation

OBJECTIVES:

- Develop and conduct a comprehensive needs assessment.
- Develop a 2+2+2+1 articulation model in teacher education.
- Develop a formal transition program for instructional aides.
- Develop a program to help high school, ROP and community college students enter an articulated career education program.
- Continue partnership among the institutions through an advisory committee, articulation committee and meetings of key representatives.
- Institutionalize the curriculum/articulation process.
- Recruit a minimum of 80 participants into the project, a minimum of 65% of whom will be from underrepresented groups, including a minimum of: 40 high school/ROP students, 35 teachers aides/RSC Human Development majors, and 5 OUSD school-age child care staff/RSC Human Development majors.
- Retain a minimum of 80% of the identified participants. (Note: 100% were retained)
- Disseminate project results/products at a minimum of two state meetings and by request.
- Institutionalize elements of articulation/outreach processes developed in the 2+2+2 project.

ABSTRACT:

The majority of the participants in the RSC 2+2+2 project are preparing for the Multiple Subjects Credential, intending to teach at the elementary school level. We do, however, accept as participants some who are intending to teach high school as well as those few who are not sure yet what they prefer. We make sure information for both levels is available and current, and that counseling responds to the individual interest of the participants.

Two of the Regional Occupation Program courses have been articulated with courses at the two-year college. This is not only true with our partner in the 2 + 2 + 2 Project, Orange USD, but also Santa Ana USD and Garden Grove USD. In turn, 12 units of community college work have been articulated as credit toward major requirements at CSU/Fullerton. Additional units of Human Development coursework are applicable as electives toward the BA degree. Counselors have been informed of the general education requirements of the waiver, program for the National Teachers Exam and students are being advised early as they choose general education courses.

Two Future Teacher Clubs are active at the two high schools in OUSD which have the largest minority enrollment. Their activities included a tour of both campuses of RSCCD and

financial aid information. A special course for high school students interested in teaching was designed, approved and taught spring semester. The project was also involved in the planning of the OUSD Hispanic Youth Conference and incorporated teaching as one professional interest strand.

Presentations were made to all instructional assistants in OUSD. Mailings went out to all school principals to identify and encourage their talented staff. A new RSC course was designed and taught, "Careers in Teaching." All 2+2+2 participants take this course to get the specific information needed and follow-up counseling.

2+2+2 participants are all assessed for basic skills early and given specific information about special support at RSC. Peer meetings were held for Instructional Assistants. New classes were approved which give the student support and up-to-date information. A specific counselor was identified for 2+2+2 participants. Visits to the next level campus were arranged to ease the transition.

Most critical aspects of the 2+2+2 program have been, or are being, institutionalized. Articulation and courses are scheduled. Presentations to high school students and instructional assistants will continue. Materials are available that can continue to be used in outreach and follow-up. The Future Teacher Clubs will continue. The tracking system is in place and commitments have been made by all segments to continue the Advisory Committee.

Saddleback College

Development of an Articulated 2+2+2 Early Childhood Education Program

Program area/discipline: Early Childhood Education
Funded: 1988-89, 1989-90

Participating Entities:
Saddleback College (Saddleback Community College District)
University of California, Irvine
Coastline ROP

OBJECTIVES:

- Refine student-tracking and follow-up system.
- Develop and implement a plan for sharing faculty.
- Share institutional materials and resources.
- Secure approval of UCI Early Childhood Education program (ECE) strands.
- Secure written Articulation Agreements between Saddleback College and UCI.
- Develop outreach program.
- Strengthen support services for project students.
- Continue the use of an intersegmental articulation council.
- Institutionalize the program.

ABSTRACT:

A formal articulation program has been established between Saddleback College, Coastline ROP, and Capistrano-Laguna Beach ROP.

An intersegmental articulation council has been in operation for two years. This council, with representatives from all three segments, meets annually to discuss issues relative to articulation and to review and approve new and revised articulation agreements.

As of the Spring 1990 semester, 52 students were identified as participating program students.

The Office of Teacher Education at the University of California, Irvine (UCI) has completed its developmental work on an Early Childhood Education Emphasis Program. Until the University receives final approval of the courses, no formal articulation agreements may be signed. Discussion has taken place to insure that the program will be articulated quickly after final approval is received.

An outreach program was begun during Phase II of the grant period. Recruitment packets were developed and disseminated throughout the service area.

The Saddleback College articulation program is directed by a full-time member of the Counseling staff. This resulted in open communication with the Counseling staff.

California State University, San Bernardino Foundation
San Bernardino 2+2+2 Teacher Options Programs (T.O.P.S.)

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
California State University - San Bernardino Foundation
Crafton Hills College
San Bernardino City Unified School District
San Bernardino County ROP
San Bernardino Valley College

OBJECTIVES:

- Maintain continuing project staff support to manage program for 1990-91.
- Provide continuing support for Program Year One participants as they proceed into a second year of project-supported activities.
- Execute the second phase of the Five-Year Plan by recruiting a minimum of 60 new students into the 2+2+2 program beginning in June, 1991.
- Evaluate the program by objective and prepare a final evaluation report for dissemination.

ABSTRACT:

Over the past two years, this 2+2+2 program has focussed on the preparation of teachers for both the elementary and secondary level, with special consideration for training of bilingual teachers. 72 students have participated in two summer programs for students at the high school, community college, and university levels. 159 students have participated from those levels in Teachers of Tomorrow Clubs at six school sites.

One of the prerequisite courses for entering the teacher credentialing program at CSU, San Bernardino, Education 200 (Introduction to Careers in Teaching), has been articulated with Education 101 (Introduction to Education) at the San Bernardino Community College District. High school students receive concurrent credit for attending the classes. Curriculum articulation is also provided through the regular transfer process of general education courses at the community college level.

Members of the 2+2+2 Advisory Board and project staff have provided a systematic, planned program of outreach throughout the 1990-91 school year. Monthly meetings were held with 1989-90 project year students; Teacher of Tomorrow Clubs were established at four high schools, two community colleges, and CSU-San Bernardino. Recruiting and informational meetings were held at all schools for students new this year, culminating in another summer program of five weeks duration for 48 students from all three segments. Parents, students, faculty, administrators, and counselors were also included in two special orientation receptions. A campus visit and a Career Day for Educators were also held.

All 2+2+2 students have had both formal and informal access to support services. The project outreach counselor met monthly with the CSU and SBVC students to monitor their progress and assist them with ongoing site visits to elementary and secondary schools. Project

co-directors also met with students to assist them with academic planning and financial aid information. High school students met with their own counselors and project staff to keep them up-dated on activities and to initiate cross-tutoring at a local elementary school. During the summer program, information on careers in teaching, credentialing, transfer, the CBEST, and financial aid was provided.

The 2+2+2 Program was coordinated institutionally through an Advisory Board of 10 representatives from each level. Administrators and counselors from each level, in turn, coordinated activities with their home institutions. The Board met monthly and also sponsored two intersegmental coordinating receptions, where information and slides about the program were presented. An information packet has been prepared to assist with institutionalization.

San Bernardino Valley College
Articulation: Industrial Technology Education

Program area/discipline: Electronics Technology, Computer Aided Drafting, Machine Trades, Aeronautics, Auto Body Repair and Refinishing
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
San Bernardino Valley College (San Bernardino Community College District)
Colton, Redlands, Yucaipa ROP
California State University, San Bernardino
Colton Joint Unified School District

OBJECTIVES:

- Incorporate area secondary educational facilities into the existing San Bernardino Valley College and California State University, San Bernardino Industrial Technology educational agreement. Create new articulation agreements between San Bernardino Valley College and secondary schools.
- Promote the Industrial Technology 2+2+2 to area students, faculty and administrators.
- Create an articulation foundation strong enough to be self-perpetuating.
- Maintain good communication and non-hierarchical partnerships with projects educational segments.
- Promote continued faculty interaction at all segments.
- Inform a greater number of educators and educational supporters of the opportunities encapsulated within this 2+2+2 project.
- Recruit students into the 2+2+2 project.
- Implement expanded support services for student participants.
- Disseminate project activities/models/results.

ABSTRACT:

The focus of the program is and has been on educating students in the technology required for the workplace of tomorrow.

This Industrial Technology Education Project dealt with area secondary schools, Regional Occupational Programs (ROP), and California State University, San Bernardino. Two more sites were added during the third year. Electronics articulation was easily accomplished due to the fact that competencies had been agreed to in the work at Colton High School. (Redlands High School and Colton High School use instructors from the Colton-Redlands-Yucaipa ROP). The aeronautics curriculum was reworked to meet the competencies at San Bernardino Valley College.

All segments were represented on the advisory committee and included: San Bernardino Valley College, Colton-Redlands-Yucaipa Regional Occupational Program (ROP), San Bernardino County Regional Occupational Program (ROP), Colton Joint Unified School District,

San Bernardino City Unified School District, Fontana Unified School District and California State University, San Bernardino.

Competencies for the Machine Trades programs and Auto Body Refinishing were discussed and a structured set of competencies was defined and accepted. The completed competencies for the Auto Body Repair and Refinishing were also completed during meetings of the instructors in those areas. Because of the differences in equipment, the competencies for the Auto Body sections took much longer than anticipated for students to participate in the 2+2+2 for this year.

Parent nights/meetings were held, and presentations were made to the California Career Education Association (CCEA) meeting held in March 1991. Articulated program presentations were made at Boards of Education and Chamber of Commerce meetings to get the word out about the advantages of articulated career programs.

Greater support of SBVC counseling staff and in-service days for articulated program site counselors greatly increased the visibility of and the advantages of student participation.

Other divisions on the campus of SBVC are seeking to take advantage of the process of articulated programs. Food Services, Child Development, Office Information Skills are all eager to pursue these types agreements.

San Diego City College
2+2+2 Teacher Education Articulation

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
San Diego City College (San Diego Community College District)
San Diego Unified School District
San Diego County Office of Education
California State University, San Diego

OBJECTIVES:

- Continue funding of 2+2+2 Articulation Program Coordinator.
- Convene 2+2+2 Teacher Education Articulation Steering Committee which reflects the leadership and commitment of the administration and faculty of each institution.
- Hire a 2+2+2 Teacher Education Articulation Counselor (.3 FTE) to implement intersegmental student outreach and counseling.
- Retain a professional firm to produce an informational/recruiting 2+2+2 Teacher Education Articulation videotape.
- Implement a Teacher Education Transfer Curriculum (to San Diego State University) at City College for working San Diego City Schools teacher aides.
- Implement intersegmental student tracking.
- Implement intersegmental student support services.

ABSTRACT:

The San Diego City College Teacher Education Articulation project has evolved to serve two populations. The first high school students enrolled in San Diego City Schools ROP Child Development Aide at five secondary sites are directed toward a Teaching Credential (multiple or single subject) and/or community college teaching. The second population, San Diego City School's teacher aides, is offered associate degree courses at a City schools' site for transfer to SDSU's liberal studies (multiple subject) undergraduate preparation for a teaching credential.

An articulation agreement between SDCCD and SDUSD awards 2 units of credit (ungraded) to students completing (with qualification) ROP Child Development Aide; the 2 units transfer to SDSU. Transfer from SDCCD to SDSU is based upon the SDSU Articulation Tables for San Diego County Community Colleges; no curricular concessions are made for 2+2+2+1 students. For City Schools teacher aides, a proposal to redefine the aide (paraprofessional) position, so that specific aspects of the work may be considered as upper division education course credit, will be explored during 1991-92.

2+2+2+1 counselors visited each participating high school twice during the school year to (1) describe the Teacher Education Articulation program and enroll students, and (2) present the videotape developed with grant funds and explain articulated course credit. During the spring semester, participants from each high school visited the SDCCD campus closest to their school and visited the SDSU Family Studies and Consumer Science/Child Development Department.

High school students enrolled in ROP Child Development Aide are encouraged to participate in their Future Teachers Clubs; City College Child Development students are encouraged to participate in the College Future Teachers Club, sponsored by the Director of the City College Tutorial Center. All program participants receive information about SDSU's Aim To Teach Program; City Schools Teacher Aides receive information on special programs for teacher aides through SDSU.

San Diego City Schools and San Diego City College will continue to serve high school students and teacher aides during 1991-92; City College will support a counselor to work with both target groups. Strong working relationships with the three program areas at SDSU will ensure continued communication and participation by the City Schools and City College Teacher Education Articulation program in the development of precertification programs during fiscally limited budgets.

College of San Mateo
2+2+2 Technical Preparation in San Mateo County

Program area/discipline: Drafting Technology, Electronics Technology
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
College of San Mateo (San Mateo Community College District)
San Mateo Unified High School District
San Jose State University
San Mateo Office of Education ROP

OBJECTIVES:

- The three segments involved in the project will participate in mutually supportive advisory committee meetings and curriculum articulation meetings and will provide student support services in order to enhance student success.
- The project advisory committee will meet to review and evaluate the direction and progress of the project and to facilitate institutionalization of 2+2+2.
- The faculty representatives from Drafting Technology and Electronics Technology from all three segments will be responsible for the review of existing articulation agreements.
- The present articulation agreements will be monitored by the project directors and the project advisory committee, and involved subject matter faculty to maintain and insure accuracy of course content.
- Additional articulation agreements will be developed between College of San Mateo and CSU-Chico, CSU-Fresno, and Cal Poly-SLO.
- The project directors will produce an articulation handbook.
- All 2+2+2 students will receive a copy of the recommended student educational plan.

ABSTRACT:

The program provides a clear educational path from high school through the community college to the State University in Technology. The areas that this program focused on are Drafting and Electronics Technology.

Curriculum articulation has been focused on course articulation in the areas of drafting and electronics technology. High school, community college and university courses have been identified and formal articulation agreements have been developed between educational segments. At the present time, eight high schools, the College of San Mateo, and four universities are participants in the program.

Outreach is multifaceted. It includes brochures printed in English and Spanish, a promotional video, and a 2+2+2 Newsletter, as well as high school visitations to classrooms and career centers by CSM 2+2+2 directors and staff. High school career nights and open houses are also used as outreach opportunities. Parents' night at CSM and the week devoted to high school students visiting the CSM campus also promote the 2+2+2 program.

In addition to the extensive matriculation process at CSM, 2+2+2 students are assigned a specially trained 2+2+2 advisor for academic guidance. This assures that the student is aware

of the 2+2+2 articulated courses and the many student services provided. There have also been peer counselors in both drafting and electronics to help 2+2+2 students when needed.

Once a student is identified as a 2+2+2 student, he/she is tracked via the schools' computers. The courses in which the students are enrolled are reviewed for appropriateness, and academic success is monitored. Currently over 60 students are being tracked.

Institutionalization was the main focus of this year's activities. Even in the budget crunch felt by the community colleges, money has been set aside to institutionalize 2+2+2. Three units of time will be assigned to one of the current 2+2+2 co-directors to maintain the present 2+2+2 programs and aid faculty members in developing new articulated programs.

Santa Barbara City College
2+2+2 Articulated Career Education Program in Nursing

Program area/discipline: Nursing
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Santa Barbara City College (Santa Barbara Community College District)
Carpenteria Unified School District
Santa Barbara County Schools, ROP
Santa Barbara High School District
California State University, Dominguez Hills

OBJECTIVES:

- Develop articulation agreements between local high schools and SBCC in the areas of science and nursing.
- Complete a formal articulation agreement between CSUDH and SBCC's ADN Nursing Program and identify the mechanisms for annual review and updates of all the nursing articulation agreements.
- Develop a well-defined written academic pathway through four years of high school, 1.5 years of the LVN Program and completion of the AND Program, and completion of the BSN Program.
- Develop and initiate a formal advisory committee for the 2+2+2 Nursing Program.
- Evaluate and refine the 2+2+2 student data base monitoring system and incorporate it into the data base used for SBCC's nursing programs.
- Develop a mechanism whereby the maintenance and updating of the 2+2+2 student monitoring system is incorporated into the functions of SBCC's Health Technologies Office.
- Develop a written procedure whereby interested students and targeted groups are provided with information on the 2+2+2 Nursing Program through the Health Technologies Office following termination of the grant.
- Institute a mechanism whereby individuals closely associated with the 2+2+2 Nursing Program receive updated information regarding the progress of the program and changes that affect program participants at the high school, community college, and four-year college level that may impact on 2+2+2 nursing students.
- Refine the outreach materials and activities associated with the 2+2+2 Nursing Program that are appropriate for utilization with each targeted group, including program participants, parents, faculty, and hospital personnel following termination of the grant.
- Evaluate the Nursing Readiness course offered for the first time during Summer 1990 and develop a framework whereby it can be marketed and offered once each year.
- Prepare project information for dissemination beyond the existence of external funding.
- Produce a high interest video to recruit underrepresented high school students into nursing.

ABSTRACT:

The primary purpose of the 2+2+2 Nursing Program is to recruit and retain underrepresented high school students into nursing and to foster their educational success from high school through four years of college. The project is recognized throughout the community of Santa Barbara as a central resource for nursing recruitment activities and information, and is considered a model program at SBCC.

This 2+2+2 program coordinates and articulates a student's educational program from high school to SBCC to California State University, Dominguez Hills (CSUDH). A computerized longitudinal monitoring system with multiple reporting capabilities has been developed and institutionalized. Two articulated nursing courses provide students with academic and clinical introductions to nursing. The first, a summer Nursing Readiness course for high school juniors and seniors, provides prospective students with a realistic orientation to college and to nursing education. The second is a Certified Nurse Assistant (CNA) course offered through Santa Barbara County Education Offices. A written articulation agreement exists between the ROP/CNA course and the SBCC/LVN and ADN Programs. A written articulation agreement between the SBCC/ADN Program and California State University, Dominguez Hills, is awaiting the signature of CSUDH.

Outreach materials that present a comprehensive and coordinated approach to nursing education and career opportunities in Santa Barbara serve as effective recruitment tools for students and parents. Outreach packets are prepared to meet the specific needs of counselors, teachers, hospital personnel and students. A recruitment video was completed with external funding. Hospital nursing staff speak at career events throughout the area. Nurse educators from SBCC provide follow-up information at the high schools for students interested in nursing education. A computerized data base with multiple reporting capabilities extracts student data and provides counselors with reports of student participants from each high school.

Several support services are available for participating students. High school students receive academic monitoring and advisement each semester. Academic pathways from high school through college clearly portray the curricula requirements from high school to SBCC and to CSUDH for a Bachelor of Science Degree in Nursing. Tutorial services are available through a variety of programs at the high schools and SBCC. Hospital junior volunteer programs support students by increasing their familiarity and interest in the hospital environment, and with patients. The hospital staff provide role modeling and informal mentorships. Volunteers receive community service hours that are required for high school graduation in one of the districts.

The 2+2+2 Nursing Advisory Committee will meet twice annually to maintain and update the activities, materials and support services of the program. A computerized data base and well-defined educational pathway will allow for ease in updating. Information about the 2+2+2 program is maintained and distributed by counselors. The Nursing Readiness course and the Certified Nurse Assistant course are institutionalized sources of information about the 2+2+2 Nursing Program.

Santa Barbara City College
Teacher Education Program

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
Santa Barbara City College (Santa Barbara Community College District)
Carpenteria Unified School District
Goleta Union School District
Santa Barbara High School District
Santa Barbara County Schools
Santa Barbara Scholarship Foundation
Westmont College
California State University, Northridge
University of California, Santa Barbara

OBJECTIVES:

- A temporary Coordinator will be hired for the length of the grant to develop, implement, and interface proposal components with existing programs and facilitate identification of senior high school students interested in teaching.
- A site teacher will be chosen to coordinate the program at each of the four high schools including experiences at two- and four-year colleges.
- The coordinator will work with CALSOAP, Migrant Education, EOPS, MESA, and other junior and senior high school programs for underrepresented students to provide exposure to teaching as a career.
- The SBCC site coordinator will work with the Office of the County Superintendent of Schools administrators of staff development programs for teaching assistants. These people will cooperatively identify and screen candidates and direct assistants to needed remediation and academic/financial/personal support services as they begin or complete their undergraduate/professional education.
- The coordinator will work with and utilize the services of faculty/staff at SBCC, UCSB and Westmont using materials and strategies developed as part of this program. College students, with particular emphasis on underrepresented persons, will be introduced to careers in teaching and articulated undergraduate/professional educational education opportunities.
- The coordinator and SBCC site coordinator will develop an articulation plan identifying sequential courses for entry into credential programs for students from junior high school through college.
- Continue Tomorrow's Teachers Clubs at four South County High Schools and among instructional aides.
- Initiate Tomorrow's Teachers Clubs at two- and four-year colleges.
- Continue Tomorrow's Teachers Newsletter.
- Solicit continued funding through district and private sources.

- Continue integration of Tomorrow's Teachers program and information with other existing campus and community programs and coordinate campus visits for Tomorrow's Teachers participants to two- and four-year colleges.
- Update and expand articulation agreements with CSU Northridge.
- Plan and execute Summer Institutes for High School Students and Instructional Aides.
- Evaluate and disseminate program materials including promotional materials.
- The project director and coordinator will disseminate results locally and statewide.

ABSTRACT:

The level of the teaching profession addressed ranged from early childhood education to university professor. The program worked with a range of participants from junior high to university students and also with paraprofessionals who are currently instructional aides. Most students showed an interest in a multiple or single subject credential. Some university students expected to continue to the Ph.D. level for university teaching. Some instructional aides felt their first level of accomplishment would be an AA degree in early childhood education.

Prior to the establishment of the Teacher Education program an intersegmental Articulation Council had been established. The previous agreements of this council served as the foundation for the 2+2+2 program in Teacher Education. General education agreements were established first. During the program, further vocational education agreements were established. There was also a Summer Institute in educational structure and philosophy developed at SBCC which is open to students at the high school level and above, and transferable to the four-year colleges.

The program outreach and recruitment activities included extensive communication with paraprofessionals through newsletters and seminars. High school students were contacted through club activities, Career Day events, College Day events and campus tours. There was also special emphasis on linking to existing programs such as EOPS, Cal Soap and the Link program. Parents and community members were reached through the Parents Day Conference, newspaper and magazine articles, a Woman's Day Conference presentation and alumni publications. Many of these activities were in Spanish and English.

On-campus support services centered on the site teachers who were able to counsel and monitor student progress in the course selections. Existing tutorial and college advising and financial aid services were also utilized at the high school level. At the college level special dedicated counseling hours were utilized at SBCC. Free consultations and referrals were offered through the Santa Barbara Scholarship Foundation. CBEST preparation workshops were offered through the Adult Education program. Math Anxiety, Fear of Forms and Time Management workshops were also offered free to college age students as well as to paraprofessional instructional aides.

High school club advisors will continue the Tomorrow's Teachers Clubs through the 1991-92 academic year. The Migrant Education program will offer a special Tomorrow's Teachers club for migrant students and their parents in the 1991-92 academic year. At the college level, SBCC will continue to offer special counseling services and has increased the resources on Teacher Education at the Career Center. The Adult Education Division will continue to offer free CBEST workshops. The SB Scholarship Foundation has established a special scholarship fund for education students as has a local private college, Westmont College. CSU, Northridge will begin offering student teaching opportunities in one of our local districts,

Carpinteria. UC, Santa Barbara School of Ed will continue to hold evening orientations in order to reach the non-traditional student community.

Southwestern College
2+2+2 Engineering Articulation Project

Program area/discipline: Engineering, Mathematics
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Southwestern College (Southwestern Community College District)
Sweetwater Union School District
San Diego State University
University of California, San Diego

OBJECTIVES:

- Develop career material in Engineering and Engineering Technology for use in career counseling with freshmen and sophomore students at the high schools. Link this with promotion of the 2+2+2 program in Engineering and reach a minimum of 200 students.
- Hold intersegmental Student Engineering Day for Engineering majors attending SWC, SDSU, UCSD, and pre-engineering articulating students from the high schools. Invite industry representatives to attend and serve a minimum of 60 students.
- Provide counseling services to Engineering majors at SWC and pre-engineering majors at Sweetwater High School District pilot schools; provide one-on-one counseling, small group sessions and telephone contact to project identified students; serve at least 50 students.
- Complete an articulation agreement with SDSU's Bachelor of Industrial Technology Program.
- Provide tutoring in Math and Science to a minimum of 200 students.
- Provide a minimum of five presentations on careers in Engineering and Engineering Technology.
- Using computerized data base, continue tracking and reporting of 2+2+2 program students; recruit a minimum of 30 new students to the program.
- Increase the number of Rohr employees taking Engineering/Engineering Technology classes by 20%.

ABSTRACT:

This program is a 2+2+2 which targets Engineering/Engineering Technology students.

Articulation agreements for transfer level Engineering, and the Bachelor of Vocational Education Program with SWC and SDSU are also in place. Pathways have been defined for students in SUHSD and SWC. Formal articulation agreements have been drawn between SWC and SDSU covering Engineering/Engineering Technology programs.

The outreach activities involved mathematics and science tutors from Southwestern College and San Diego State University working each afternoon at Sweetwater Union High School District high schools. In addition to the tutoring services, professionally printed materials on careers in Engineering and Engineering Technology were placed in all of the SUHSD high school career/counseling centers. Peer advisors from Southwestern College were trained in the use of these materials.

Tutorial sessions were conducted by Southwestern College and San Diego State University students at Southwestern College in Statics and Dynamics, and Fortran Programming. Furthermore, tutors from Southwestern College conducted tutorial sessions at the SUHSD high schools in Algebra, Geometry, Math Analysis, Calculus, Chemistry and Physics courses.

Peer advisors and peer tutors are available for assistance in math and sciences at SWC and SUHSD schools. In addition to these services a mentor program has been implemented with the assistance of the Society of Hispanic Engineers.

The student services provided under this grant will be institutionalized within Southwestern College budget constraints.

State Center CCD - Fresno City College, Kings River College
Teacher Education Program

Program area/discipline: Teacher Education
Funded: 1989-90, 1990-91

Participating Entities:
State Center CCD - Fresno City College, Kings River Community College
Clovis Unified School District
Fresno Unified School District
Kerman Unified School District
Parlier Unified School District
Washington Unified High School District
Fresno County Office of Education
Fresno Metropolitan Regional Occupational Program
California State University, Fresno

OBJECTIVES:

- Plan and develop a bilingual/cross cultural AA/transfer program at Kings River Community College.
- Recruit minority teacher aides and other school district employees for participation in the project.
- Improve retention of ethnic minority students who are prospective teachers by linking them with appropriate mentors and providing counseling tailored to meet their needs at community colleges and CSUF.
- Provide academic assistance for ethnic minority students to improve their retention in teacher preparation programs at FCC, KRCC, and CSUF.
- Establish community college teacher education classes for six lead high schools by June, 1991.
- Increase completion rate of CBEST preparation classes for 75 underrepresented students at the high school.
- Increase the number of participants in teacher education classes among the different segments (target 50) by June 30, 1991.
- Expand the mentoring program at each community college during the project year.
- By June, 1991, increase leadership camp enrollment from 50 to 100 students.
- By June 30, 1991, develop a comprehensive student tracking system for students participating in the program.
- By spring semester, design and implement a dissemination plan for the 2+2+2+1 project.
- Develop a plan to institutionalize teacher education programs at high school, community college and university level by June 30, 1991.
- Expand in-service training program for teachers, counselors and administrators at each level by June 1, 1991.
- By June, 1991, expand community college Teachers of Tomorrow clubs at KRCC and FCC.

ABSTRACT:

The following levels of the teaching profession addressed by this project were: Elementary K-8 (Liberal Studies major and multiple subject), and Secondary 9-12 (single subject).

In partnership with California State University, Fresno, five lead school districts (Clovis Unified School District, Fresno Unified School District, Kerman Unified School District, Washington Union High School District, Parlier Unified School District, and the Fresno Metropolitan Regional Occupation Center/Program, the State Center Community College District) set out to develop a 2+2+2+1 Articulated Teacher Education Program for the purpose of increasing the number of teacher education candidates from underrepresented groups.

The District and the project schools have been articulating for three years, and have just begun to branch out from the vocational and technical areas into the academic areas.

During its first year of the 2+2+2+1 project, the colleges have established teacher centers and have student mentors assigned to each of the community college campuses. The University has provided students to visit and recruit high school students into the teacher education field of study; and some 30 Teachers of Tomorrow Clubs have been established the local high school and junior high campuses.

A representative from the Fresno County Superintendent of Schools Office has been an active participant and serves as liaison for the Teachers of Tomorrow Clubs. Each participating institution has designated professionals responsible for the Teacher Education Program articulation effort.

Project liaison from CSUF has met with student services staff in the SCCCD and representatives from the local high schools to develop career path options in the areas of technical and industrial education and with students planning to become general education teachers at either the elementary, junior high, or high school levels.

Staff at the community college and university level have examined the 19 waiver programs for meeting the credential requirements at CSUF and have disseminated that information to sophomores, juniors and seniors in the high schools. Brochures have been printed advertising the 2+2+2+1 concept.

Student Support Services provided by the Teacher Education Project include: educational plans/transfer procedures, Teacher Ed. 10 - Introduction to Teaching class, leadership camp, CBEST Workshops, Teachers of Tomorrow Club Activities, and tracking.

The following have been institutionalized at State Center CCD: Teacher Ed club activities, educational plans/transfer procedures, CBEST Workshops at CSUF and tracking.

Stagg High School

Caring, Advising, Reaching, Educating: Project CARE

Program area/discipline: Nursing
Funded: 1988-89, 1989-90, 1990-91

Participating Entities:
Stockton Unified School District
San Joaquin Delta College
California State University, Stanislaus
Woodruff ROP

OBJECTIVES:

- Delta College will administer an assessment test.
- Advisory committee meetings and articulation committee meetings will be held on a regular basis.
- The articulation agreement with Delta will be finalized.
- Counseling and guidance services by both counselors and teachers will be retained.
- Field trips will be taken to health care business and career fairs and SJDC and CSU for students to develop confidence.
- Guest speakers from the health professions will visit Stagg classes.
- Detailed records will be kept on students.
- Information will be disseminated to parents and community on a regular basis.

ABSTRACT:

Stagg High School's 2+2+2 program is a nursing program that provides students with the opportunity to begin a career in the nursing field in high school that will coordinate and articulate through the postsecondary level. Students also have an opportunity to observe the health careers they are interested in with the possibility of getting part-time jobs in their field while going to school.

Students have available three classes at Stagg High taught by a registered nurse, certified by the State, that qualify for college credit in the nursing field. The program at Stagg works closely with the Department Chairperson of the Health Sciences at Delta and some of the faculty there to coordinate the students' classes and overall education. Delta has had in place for several years an agreement with California State University, Stanislaus, that allows the students to move smoothly from the nursing program at Delta into the university baccalaureate program.

Due to the limitation put on the nursing program that only instructors certified by the State of California can teach classes for college credit, the high school's classes are limited in number and size. Spaces available for the program were advertised by teachers in the program in ninth and tenth grade classes, by counselors who were preregistering eighth graders, students from the program who demonstrated CPR at the middle school and in the local malls, a health fair held at Stagg, and advertisements in the Stockton Unified School District's class bulletin that goes out to all the counselors and high school students in the district.

Students had a special counselor assigned to the program for academic advisement; Delta College provided academic assessment/placement tests for the program's juniors and seniors early in the school year to introduce them to Delta's placement process; three chapters of Health Occupations Students of America (HOSA) were organized and some members went to state and national meetings; field trips to Delta College, hospitals, and medical facilities were provided; and files were established for each student as they entered the program that contained their transcripts, thus allowing each teacher to advise the students in classes needed both for graduation and college work.

Stockton Unified School District has approved the program and includes the description/advertisement in the secondary school bulletin that is sent to every student each year. Through our advisory council and support committee from local professionals in the medical field, support is provided in guest speakers, equipment contributions, and tours. Counselors at Stagg High are educated in the field and help direct potential students into our classes.

APPENDIX B

Career Education Projects Tracking Detail Tables
By Enrollment Status by Semester A-55
By Age, Ethnicity, Gender, Educational Goal by Semester . . A-59
Teacher Education Projects Tracking Detail Tables
By Enrollment Status by Semester A-63
By Age, Ethnicity, Gender, Educational Goal by Semester . . A-64

2+2+2 Career Education Projects Tracking
Data Submitted for Students Tracked in at Least One Course
by Semester, by Agency*

Agency	Fall 1989									Spring 1990								
	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED	IN FIELD	OUTSIDE PROGRAM	TOTAL	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED	IN FIELD	OUTSIDE PROGRAM	TOTAL
American River																				
New	2									2	1	7								8
Returning	84	12								96	85	12								97
Butte																				
New											36	1								37
Returning																				
Chico Foundation																				
New	6	2	14		6					28	18	2	9		45					74
Returning											8	2	5		13					28
Cerritos																				
New	2									2										
Returning	168	1	76			102			14	361	152		47			130			17	346
Compton																				
New	80	14	6							100	1		20							21
Returning	1									1	70	13	6							89
CSU, Long Beach																				
New																				
Returning																				
East San Gabriel ROP																				
New		30								30										
Returning		1								1		31								31
Fullerton																				
New		11								11		55								55
Returning												11								11
Golden West																				
New		9	67							76	38	8	17							63
Returning			111	1						112	1	4	148							153

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Agency	Fall 1989									Spring 1990								
	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED IN FIELD	OUTSIDE PROGRAM	TOTAL	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED IN FIELD	OUTSIDE PROGRAM	TOTAL
Imperial Valley																		
New	171			1		25		10	207	14					3		1	18
Returning										145					25		10	180
Long Beach City																		
New	76					12			88									
Returning	30					20			50	35								35
San Bernardino Valley																		
New	16		12						28									
Returning										16		9						25
San Mateo																		
New	21				7				28									
Returning	5		6		3				14	26		6		10				42
Santa Barbara																		
New		2				7			9	7	10	7						24
Returning										4	3				2			9
Southwestern																		
New	1	5							6	32	30				6			68
Returning	7	14	21			4		4	50	4	22	15			5			46
Stagg High School																		
New	55								55	1								1
Returning										53								53
COLUMN TOTAL																		
New	430	73	99	1	14	44		10	670	148	113	53		45	9		1	369
Returning	295	28	214	1	3	126		18	685	599	98	236		23	162		27	1145

*Some projects reporting returning students in Fall 1989 began tracking those students in Spring of 1989 and, therefore, show them as "returning."

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2+2+2 Career Education Projects Tracking
Data Submitted for Students Tracked in at Least One Course
by Semester, by Agency

Agency	Fall 1990										Spring 1991									
	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED	IN FIELD	OUTSIDE	PROGRAM	TOTAL	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED	IN FIELD	OUTSIDE	PROGRAM	TOTAL
American River																					
New	203	20			1						224	237	34			14					285
Returning	86	10			9						105	288	29			10					327
Butte																					
New	122	15									137	75	12								87
Returning	23										23	123	14								137
Chico Foundation																					
New	23	9	22		21						75	47	4			41					92
Returning	7		5		4						16	8	5	12		36					61
Cerritos																					
New																					
Returning			48			63					111			33			49				82
CSU, Long Beach																					
New	3	11	16	3		3	2	1			39	9	3	3	2						17
Returning												3	11	15	4		1	1	4		39
East San Gabriel ROP																					
New																					
Returning		22									22		22								22
Fullerton																					
New		3	1			6					10	9	24				1				34
Returning		14	1			24	4	18			61		30	4			6	4	1		45
Golden West																					
New	52	51	8								111		75	59							134
Returning	1	5	145								151	1	6	151							158
Imperial																					
New	38		2			26		2			68						6				6
Returning	76		10			40		7			133	137		6			25		2		170

Agency	Fall 1990									Spring 1991								
	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED IN FIELD	OUTSIDE PROGRAM	TOTAL	HS	ROP	CC	FOUR-YR	ADULT	UNARTIC	EMPLOYED IN FIELD	OUTSIDE PROGRAM	TOTAL
Long Beach						1			1									
New																		35
Returning	13					142			155	35								
San Bernardino									57									
New	17	40								14	27	18			1			60
Returning	5		9						14									
San Mateo			8			7			15	5				8				13
New												9			31	2	5	
Returning	13		1		9	24	2	5	54	13				9				69
Santa Barbara									54	10		7						17
New	38	10	6															
Returning	8		11			7			26	37		7			7			51
Southwestern																		
New										3		1						4
Returning	15	33	10						58									
Stagg High School									28									
New	28									59					7		8	74
Returning	38					8		7	53									
COLUMN TOTAL	524	159	63	3	22	43	2	3	819	393	153	70	2	63	7	0	0	688
New	285	84	240		22	308	6	37	982	722	145	257	4	55	127	7	20	1337
Returning																		

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2+2+2 Career Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

FALL 1989 SEMESTER	American River	Chico Found.	Cerritos	Compton	East San Gabriel	Fullerton	Golden West	Imperial	Long Beach	San Bernar-dino	San Mateo	Santa Barbara	South-western	Stagg High School	TOTAL
Age	N=91	N=28	N=328	N=101	N=31	N=11	N=188	N=202	N=137	N=28	N=42	N=9	N=56	N=55	N=1331
17 and under	1%	0	0	48%	58%	27%	3%	42%	85	39%	60%	33%	7%	64%	27%
18	19	4%	45%	27	36	9	2	39	10	11	26	22	36	27	26
19	62	4	33	19	7	18	1	15	2	11	0	11	14	7	18
20-21	17	29	8	2	0	9	5	4	0	4	12	22	9	2	6
22-25	0	21	4	2	0	0	21	0	0	4	2	0	9	0	5
26-30	0	7	4	0	0	9	27	0	0	4	0	0	18	0	6
31-40	0	18	4	2	0	18	32	0	0	25	0	0	5	0	8
41-50	1	18	2	1	0	9	9	0	0	0	0	11	2	0	3
51 and over	1	0	1	0	0	0	2	1	3	4	0	0	0	0	1
Ethnicity	N=98	N=28	N=359	N=101	N=31	N=11	N=188	N=205	N=133	N=28	N=42	N=9	N=42	N=55	N=1347
American Indian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black	7%	2	1%	4%	8%	9%	3%	3%	19%	0	0	11%	2%	15%	5%
Asian	6	4	8	6	0	27	9	0	15	7%	10%	11	7	22	8
Hispanic	8	4	45	77	58	46	7	82	24	36	21	33	40	29	40
Filipino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White	66	86	32	12	32	18	76	11	33	43	52	44	31	22	39
Other	12	11	14	1	0	0	5	3	9	14	17	0	19	13	9
Decline to State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gender	N=98	N=28	N=361	N=101	N=31	N=11	N=188	N=207	N=131	N=28	N=42	N=9	N=55	N=55	N=1362
Female	64%	43%	4%	7%	84%	9%	91%	61%	30%	18%	5%	100%	11%	66%	40%
Male	36	57	96	93	16	91	9	38	70	82	95	0	89	34	60
Educational Goal	N=95	N=24	N=198	N=101	N=13	N=11	N=188	N=206	N=126	N=28	N=42	N=8	N=56	N=54	N=1185
H.S. Diploma	3%	4%	23%	1%	0	0	0	8%	2%	0	2%	13%	0	2%	6%
Attend C.C.	5	4	43	15	0	18%	0	15	10	7%	2	0	0	20	15
AA or AS	14	12	0	36	13%	18	31%	22	14	21	29	25	0	2	17
4-yr college	11	33	34	49	7	0	0	16	28	0	7	38	30%	39	21
BA or BS	67	46	0	0	81	64	69	39	47	71	60	25	70	37	41

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2+2+2 Career Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

SPRING 1990 SEMESTER	American River	Butte	Chico Found.	Cerritos	Compton	East San Gabriel	Fullerton	Golden West	Imperial	Long Beach	San Bernar-dino	San Mateo	Santa Barbara	South-western	Stagg High School	TOTAL
Age	N=97	N=37	N=101	N=315	N=109	N=31	N=66	N=216	N=194	N=35	N=25	N=42	N=33	N=114	N=54	N=1491
17 and under	1%	65%	32%	0	39%	58%	9%	4%	45%	80%	44%	60%	27%	33%	65%	25%
18	18	32	18	47%	23	36	17	1	36	17	12	26	15	40	26	27
19	58	3	10	32	17	7	18	0	14	0	12	0	6	11	7	17
20-21	16	0	10	9	1	0	6	4	4	0	4	12	9	4	2	6
22-25	2	0	13	4	6	0	9	21	0	0	4	2	0	5	0	6
26-30	1	0	7	3	3	0	18	27	0	0	0	0	12	5	0	7
31-40	3	0	5	4	6	0	15	32	0	0	20	0	21	3	0	8
41-50	1	0	6	1	4	0	8	10	0	0	0	0	9	1	0	3
51 and over	1	0	0	1	2	0	0	2	1	3	4	0	0	0	0	1
Ethnicity	N=105	N=37	N=102	N=342	N=109	N=31	N=66	N=216	N=196	N=34	N=25	N=42	N=33	N=103	N=54	N=1510
American Indian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black	8%	0	2%	1%	6%	10%	8%	4%	2%	12%	0	0	3%	5%	15%	4%
Asian	6	5%	1	8	5	0	15	7	0	12	8%	10%	3	7	22	6
Hispanic	8	8	4	45	77	58	26	7	84	24	40	21	36	37	30	37
Filipino	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
White	68	84	77	31	10	32	36	78	12	41	36	52	49	20	20	42
Other	11	3	17	15	3	0	15	4	3	12	16	17	9	31	13	11
Decline to State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gender	N=105	N=35	N=102	N=344	N=109	N=31	N=66	N=216	N=198	N=33	N=25	N=42	N=33	N=111	N=54	N=1519
Female	67%	3%	35%	5%	22%	84%	5%	93%	62%	33%	16%	5%	91%	16%	67%	41%
Male	33	97	65	95	78	16	95	7	37	67	84	95	9	84	33	59
Educational Goal	N=102	N=37	N=95	N=189	N=109	N=31	N=66	N=216	N=196	N=33	N=25	N=42	N=28	N=114	N=53	N=1351
H. S. Diploma	4%	0	10%	24%	1%	0	0	1%	8%	0	0	2%	4%	0	2%	6%
Attend C.C.	6	19%	15	43	25	0	20%	1	16	6%	8%	2	14	0	21	16
AA or AS	14	19	14	0	28	13%	29	29	22	6	24	29	25	0	2	16
4-yr College	10	11	16	33	46	7	3	0	14	33	0	7	36	44%	40	20
BA or BS	67	51	46	0	0	81	49	69	39	55	68	60	21	56	36	42

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2+2+2 Career Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

FALL 1990 SEMESTER	American River	Butte	Chico Found.	Cerritos	CSU, Long Beach	East San Gabriel	Fullerton	Golden West	Imperial	Long Beach	San Bernardino	San Mateo	Santa Barbara	Southwestern	Stagg High School	TOTAL
Age	N=317	N=160	N=88	N=105	N=39	N=22	N=71	N=261	N=196	N=156	N=71	N=69	N=78	N=58	N=81	N=1776
17 and under	22%	74%	3%	1%	33%	46%	9%	12%	65%	81%	69%	45%	44%	36%	78%	40%
18	44	24	10	27	8	46	21	3	27	12	16	19	18	35	15	22
19	26	1	9	32	15	9	17	0	8	5	4	12	5	12	5	11
20-21	5	0	23	15	15	0	6	7	1	0	1	13	9	7	1	6
22-25	1	0	14	10	13	0	9	18	0	0	1	6	1	5	0	5
26-30	0	0	13	7	5	0	21	22	0	0	0	4	8	3	0	6
31-40	1	1	16	5	3	0	14	28	0	0	7	1	12	2	0	7
41-50	0	1	10	3	8	0	4	7	0	0	0	0	4	0	0	2
51 and over	0	0	2	1	0	0	0	2	0	3	1	0	0	0	1	1
Ethnicity	N=329	N=160	N=86	N=111	N=39	N=22	N=71	N=262	N=201	N=131	N=70	N=69	N=79	N=57	N=60	N=1771
American Indian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black	9%	0	5%	2%	13%	14%	7%	4%	1%	17%	9%	0	3%	4%	14%	6%
Asian	11	1	5	10	8	0	14	8	1	18	7	12%	4	7	26	8
Hispanic	7	8	5	45	36	50	27	7	87	22	36	13	56	40	22	27
Filipino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White	64	88	74	27	36	36	39	76	10	34	43	61	30	16	26	50
Other	9	3	12	16	8	0	13	5	2	9	6	15	8	33	12	9
Decline to State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gender	N=329	N=160	N=87	N=111	N=39	N=22	N=71	N=262	N=201	N=149	N=71	N=69	N=80	N=57	N=81	N=1772
Female	64%	6%	38%	5%	92%	86%	6%	93%	67%	28%	4%	25%	86%	19%	67%	51%
Male	36	94	42	95	8	14	94	7	33	72	96	75	14	81	33	49
Educational Goal	N=326	N=160	N=83	N=70	N=38	N=22	N=71	N=262	N=201	N=145	N=71	N=69	N=67	N=58	N=80	N=1706
H.S. Diploma	3%	1%	1%	13%	0	0	0	5%	8%	3%	6%	1%	3%	0	5%	4%
Attend C.C.	4	7	4	53	11%	0	23%	1	23	8	13	1	24	0	16	11
AA or AS	10	52	35	0	3	18%	25	28	25	13	27	19	19	0	1	21
4-yr college	17	25	34	34	42	0	3	0	13	26	10	10	37	71%	41	20
BA or BS	65	15	27	0	45	82	49	67	31	50	45	68	16	29	36	45

2+2+2 Career Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

SPRING 1991 SEMESTER	American River	Butte	Chico Found.	Cerritos	CSU, Long Beach	East San Gabriel	Fullerton	Golden West	Imperial	Long Beach	San Bernar-dino	San Mateo	Santa Barbara	* South-western	Stagg High School	TOTAL
Age	N=600	N=190	N=108	N=76	N=56	N=22	N=77	N=290	N=174	N=35	N=60	N=82	N=67	N=4	N=74	N=1921
17 and under	49%	80%	41%	0	41%	46%	35%	13%	55%	91%	65%	54%	57%	75%	78%	47%
18	30	18	13	28%	11	46	13	2	36	3	17	16	24	0	14	21
19	14	1	8	36	11	9	12	2	7	0	5	10	3	0	5	9
20-21	3	0	11	13	11	0	5	9	2	0	2	11	5	25	1	5
22-25	1	0	7	8	14	0	8	18	0	0	2	5	0	0	0	5
26-30	1	0	8	5	5	0	13	22	0	0	0	4	6	0	0	5
31-40	2	1	7	7	2	0	12	26	0	0	8	1	3	0	0	6
41-50	1	1	5	1	5	0	3	8	0	0	0	0	3	0	0	2
51 and over	0	0	1	3	0	0	0	1	1	6	2	0	0	0	1	1
Ethnicity	N=612	N=224	N=105	N=82	N=56	N=22	N=77	N=292	N=174	N=32	N=59	N=82	N=68	N=4	N=74	N=1969
American Indian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black	7%	0	5%	1%	16%	14%	3%	2%	2%	16%	5%	0	4%	0	14%	5%
Asian	11	0	0	9	5	0	9	10	1	22	9	11%	4	0	27	8
Hispanic	7	8%	9	44	38	50	36	9	78	22	39	13	57	25%	20	21
Filipino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White	66	76	78	34	29	36	42	74	16	31	44	62	28	0	26	57
Other	10	15	9	12	13	0	10	6	3	9	3	13	6	75	14	9
Decline to State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gender	N=612	N=224	N=149	N=82	N=56	N=22	N=77	N=292	N=176	N=32	N=60	N=82	N=68	N=4	N=74	N=2015
Female	68%	7%	73%	4%	88%	86%	5%	83%	67%	25%	5%	37%	90%	0	68%	56%
Male	32	93	28	96	12	14	95	17	33	75	95	63	10	100%	32	44
Educational Goal	N=607	N=224	N=101	N=54	N=55	N=22	N=77	N=292	N=175	N=31	N=60	N=82	N=56	N=4	N=73	N=1918
H.S. Diploma	4%	5%	5%	15%	0	0	0	10%	7%	3%	7%	1%	2%	0	4%	5%
Attend CC	5	31	23	54	7%	0	26%	3	18	3	13	2	29	0	15	13
AA or AS	10	35	22	0	4	18%	21	18	22	26	23	16	18	0	1	17
Attend 4-year	18	17	31	32	56	0	7	0	13	36	7	9	36	25%	43	17
BA or BS	63	13	20	0	33	82	47	70	41	32	50	72	16	75	37	48

*Tracking data is incomplete as of 10/1/91

2+2+2 Tracking - Teacher Education Projects Tracking
Data Submitted for Students Tracked in at Least One Course
by Semester, by Agency

Agency	Fall 1990					Spring 1991				
	High School	ROP	Community College	Four-Year	TOTAL	High School	ROP	Community College	Four-Year	TOTAL
American River										
New	101		6		n=107	70				n=70
Returning						101		6		n=107
CSU, Los Angeles										
New	123				n=123	35				n=35
Returning						116				n=116
CSU, San Bernardino										
New	126		7		n=133					
Returning						121		7		n=128
College of the Desert										
New	9		102	8	n=119	1		15	1	n=17
Returning						7		47	7	n=61
DeAnza										
New	220				n=220					
Returning						220				n=220
Rancho Santiago										
New	17		32		n=49	13		57		n=70
Returning						17		32		n=49
San Diego City										
New	98				n=98					
Returning						98				n=98
Santa Barbara										
New	59		55	21	n=135			3		
Returning						17		24		n=44
State Center										
New	51		130		n=181		4			n=4
Returning						51		130		n=181
COLUMN TOTAL										
New	n=804		n=332	n=29	n=1165	n=119	n=4	n=75	n=1	n=199
Returning						n=650	n=98	n=246	n=7	n=1001

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2+2+2 Tracking - Teacher Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

Fall 1990	American River	CSU, Los Angeles	CSU, San Bernardino	College of the Desert	DeAnza	Rancho Santiago	San Diego	Santa Barbara	State Center	TOTAL
Age	n=107	n=113	n=109	n=118	n=179	n=49	n=98	n=87	n=108	n=968
17 and under	82%	61%	61%	6%	8%	31%	80%	54%	37%	44%
18	17	16	3	13	10	8	16	17	16	13
19	1	4	3	6	13	12	1	1	7	6
20-21	0	1	5	10	18	14	1	7	12	8
22-25	0	3	4	21	13	2	0	3	6	7
26-30	0	6	6	12	17	4	1	5	7	7
31-40	0	6	11	25	11	14	1	9	11	10
41-50	0	2	9	5	5	10	0	3	4	4
51 and over	0	1	0	2	5	4	0	0	1	2
Ethnicity	n=107	n=123	n=133	n=118	n=193	n=49	n=98	n=73	n=179	n=1073
Amer.Indian	1%	2%	1%	0%	2%	0%	3%	0%	0%	1%
Black	11	4	17	2	4	0	14	3	6	7
Asian	7	2	7	0	9	2	3	6	9	6
Hispanic	12	73	60	39	21	65	17	60	56	43
Filipino	4	2	0	0	2	2	16	0	2	3
White	59	7	14	58	59	29	39	26	24	36
Other	3	4	2	1	3	2	2	3	2	2
Decline/State	4	7	0	1	1	0	5	3	2	2
Gender	n=107	n=121	n=133	n=118	n=218	n=48	n=98	n=131	n=181	n=1156
Female	80%	6%	68%	86%	78%	96%	96%	74%	82%	73%
Male	20	94	32	14	22	4	4	26	18	27
Educational Goal	n=104	n=123	n=133	n=114	n=220	n=49	n=98	n=78	n=181	n=1100
Attend CC	4%	0%	2%	4%	0%	0%	8%	0%	12%	4%
AA or AS	2	0	1	18	1	0	7	33	77	18
BA or BS	16	43	29	7	1	0	43	53	11	20
Teach.Cert.	59	0	64	12	98	0	42	13	0	39
MA or MS	19	57	3	58	0	0	0	1	0	15
PH.D.	0	0	2	0	0	100	0	0	0	5

2+2+2 Tracking - Teacher Education Projects Tracking
Age, Ethnicity, Gender, and Educational Goal by Agency

Spring 1991	American River	CSU, Los Angeles	CSU, San Bernardino	College of the Desert	DeAnza	Rancho Santiago	San Diego	Santa Barbara	State Center	TOTAL
Age	n=177	n=140	n=109	n=79	n=179	n=117	n=98	n=45	n=112	n=1056
17 and under	81%	69%	61%	8%	8%	24%	80%	31%	36%	46%
18	17	16	3	13	10	6	16	11	15	12
19	2	4	3	8	13	6	1	2	6	6
20-21	0	1	5	10	18	12	1	18	12	8
22-25	0	2	4	22	13	9	0	4	6	6
26-30	0	4	6	13	17	9	1	7	7	7
31-40	0	4	11	24	11	20	1	20	11	10
41-50	0	0	9	3	5	11	0	7	5	4
51 and over	0	1	0	1	5	3	0	0	2	2
Ethnicity	n=177	n=150	n=133	n=79	n=193	n=119	n=98	n=39	n=183	n=1171
Amer.Indian	2%	2%	1%	0%	2%	1%	3%	0%	0%	1%
Black	14	3	17	1	4	1	14	5	6	7
Asian	7	1	7	0	9	2	3	5	9	6
Hispanic	12	76	60	39	21	43	17	33	57	40
Filipino	4	1	0	0	2	1	16	0	2	3
White	55	7	14	58	59	48	39	49	23	38
Other	2	3	2	1	3	3	2	3	2	2
Decline/State	3	6	0	1	1	3	5	5	2	3
Gender	n=177	n=149	n=133	n=79	n=210	n=119	n=98	n=48	n=185	n=1200
Female	80%	6%	68%	86%	81%	92%	96%	77%	82%	73%
Male	20	94	32	14	19	8	4	23	18	27
Educational Goal	n=174	n=151	n=133	n=77	n=220	n=119	n=98	n=34	n=185	n=1191
Attend CC	2%	0%	2%	0%	0%	0%	8%	0%	12%	3%
AA or AS	3	0	1	16	1	0	7	29	78	15
BA or BS	17	46	29	11	1	0	43	50	10	19
Teach.Cert.	57	0	64	8	98	0	42	21	0	38
MA or MS	20	54	3	65	0	0	0	0	0	14
PH.D.	0	0	2	0	0	100	0	0	0	10

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APPENDIX C

Bibliography A-67
Definition of Tech-Prep A-68

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Definition of Tech-Prep

During the time that this pilot 2+2+2 was being implemented in California the federal government enacted legislation as part of the Carl D. Perkins Vocational and Applied Technology Act specifically aimed at equipping youth with the technical and academic skills to participate in an alternative program to the traditional "college prep" program. Tech-Prep is defined as an articulation program between high schools and community colleges developed with the involvement of industry. This is, then, a 2+2 program whose goals are similar to those of the first linkage of the 2+2+2 and which, when implemented will produce a well-rounded student better prepared to move into the workplace. Although not presently implemented, it may be anticipated that because Tech-Prep will produce students with a more comprehensive technical and academic preparation it may also enable them to continue on to the university more easily. The synergistic effect of a cooperative relationship between the 2+2+2 and the Tech-Prep programs would improve the options and benefits for students in both programs. A first step in such a cooperative effort could be achieved by extending the funding for the 2+2+2 dissemination project and using it to expand the resources of the planned Tech-Prep Resource Centers.

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